The OIL and GAS JOURNAL

PRODUCING REFINING MARKETING

VOL. 23. NO. 50 TULSA, OKLAHOMA, MAY 7, 1925

Copyright, 1925, by The Petroleum Publishing Co.

TABLE OF CONTENTS

SPECIAL ARTICLES

Another Decline in Light Oil Output 19
By Andrew M. Rowley
Gain at Smackover much smaller than during previous two weeks. California still important factor.

Gasoline Substitute Possibilities 21
By L. M. Fanning
Conservation board's questionnaire directs attention to progress toward synthetic motor fuels. Germany's methynol.

"Gasoline Crude" Output Is Declining 22
By James McIntyre
Industry is again entering a cycle of heavy oil production. One-third of total is of low gravity.

Isenhower Pool in Texas Unique Field (illustrated) 23
By C. D. Lockwood
Where they complete wells in less than week at cost of $1,350. Throckmorton County will bear watching.

Flush Crude Oil Production Increases 24
Smackover Field responsible for big gain in initial output of wells completed during month of April.

The Light Oil Output Decline (Editorial) 26

Conditions in the Reservoir Interior (illustrated) 56
By Stanley C. Herold
Different pressures considered in article on fluid delivery from oil and gas reservoirs.

Scavenging Valves to Avert Compressor Explosions 74
By William F. Parish and William B. Smith Whaley

To Get More Power From Gallon 78
By L. M. Fanning

Improvements in New Dephlegmators (illustrated) 125
To eliminate disadvantages in fractionating towers, reducing distillates requiring redistillation and treatment cost.

FIELD OPERATIONS

Late News From the Fields 28
North Central Texas 30-32
By George R. Kelley
California 34
By L. P. Stockman
Mexico 36
By George Blardone
Oklahoma 38
By J. L. Dwyer
North Louisiana-Arkansas 40
By M. L. Vaughn
Kansas 42
By J. L. Dwyer
Southwest Texas 44
By Staff Correspondent
Gulf Coast 46
By P. L. McGreal
Rocky Mountain Area 48
By F. B. Taylor
Canada 48
By Victor Lauriston
Central West 52
By Whit
Pennsylvania-West Virginia 58
By D. S. Wakenight
Kentucky-Tennessee 58
By Vern T. Whitney

REFINING AND MARKETING

Oklahoma Refined Market Tone Firmer 20
By Neil Williams
Increased buying develops with sellers holding steadily. Motor gasoline feature, nautral gasolines strong.
Refining and Marketing News 124
Gallonage Good in Chicago, Prices Unchanged 126
By J. B. Waldo
Eastern Gasoline Less Strong, Due to California Shipments 127
By N. O. Fanning
Refinery and Crude Prices 128-129
Tank Wagon Quotations 130

ARTICLES OF GENERAL INTEREST

The Advertisers Index 17
Natural Gas Developments 60
Men Known in Oildom and Personals 62
Equipment and Supplies 66
Progress in Standardization 68
Thomas Midgley, Jr., Answers Ethyl Gasoline Attack 70
Cracking of Mexican Crude Expected on Extensive Scale 80
Progress in Petroleum Research 82
Gulf Port Shipments in March 92
Rumanian Government Explains New Law 104
Classified Want Advertisements 118-119-120
Oil Securities More Active and Strong 122
By N. O. Fanning
Statistics of Crude Petroleum for March 123
Dependable Mid-Continent States Make Great Showing 138
Mexican Shipments in March 140
Crude Petroleum Statistics 152

BE A REGULAR READER

The OIL and GAS JOURNAL Tulsa, Okla.

You are hereby directed to mail The Oil and Gas Journal to me for.....year. Enclosed find remittance $.....

Classify my interests as checked by me.
.....Producing .....Refining
.....Equipment .....Marketing

Name.....
Address.....
City.....

$6 a Year
$3 6 Month

The OIL and GAS JOURNAL

PRODUCING REFINING MARKETING

VOL. 23. NO. 50 TULSA, OKLAHOMA, MAY 7, 1925

Copyright, 1925, by The Petroleum Publishing Co.

TABLE OF CONTENTS

SPECIAL ARTICLES

Another Decline in Light Oil Output 19
By Andrew M. Rowley
Gain at Smackover much smaller than during previous two weeks. California still important factor.

Gasoline Substitute Possibilities 21
By L. M. Fanning
Conservation board's questionnaire directs attention to progress toward synthetic motor fuels. Germany's methynol.

"Gasoline Crude" Output Is Declining 22
By James McIntyre
Industry is again entering a cycle of heavy oil production. One-third of total is of low gravity.

Isenhower Pool in Texas Unique Field (illustrated) 23
By C. D. Lockwood
Where they complete wells in less than week at cost of $1,350. Throckmorton County will bear watching.

Flush Crude Oil Production Increases 24
Smackover Field responsible for big gain in initial output of wells completed during month of April.

The Light Oil Output Decline (Editorial) 26

Conditions in the Reservoir Interior (illustrated) 56
By Stanley C. Herold
Different pressures considered in article on fluid delivery from oil and gas reservoirs.

Scavenging Valves to Avert Compressor Explosions 74
By William F. Parish and William B. Smith Whaley

To Get More Power From Gallon 78
By L. M. Fanning

Improvements in New Dephlegmators (illustrated) 125
To eliminate disadvantages in fractionating towers, reducing distillates requiring redistillation and treatment cost.

FIELD OPERATIONS

Late News From the Fields 28
North Central Texas 30-32
By George R. Kelley
California 34
By L. P. Stockman
Mexico 36
By George Blardone
Oklahoma 38
By J. L. Dwyer
North Louisiana-Arkansas 40
By M. L. Vaughn
Kansas 42
By J. L. Dwyer
Southwest Texas 44
By Staff Correspondent
Gulf Coast 46
By P. L. McGreal
Rocky Mountain Area 48
By F. B. Taylor
Canada 48
By Victor Lauriston
Central West 52
By Whit
Pennsylvania-West Virginia 58
By D. S. Wakenight
Kentucky-Tennessee 58
By Vern T. Whitney

REFINING AND MARKETING

Oklahoma Refined Market Tone Firmer 20
By Neil Williams
Increased buying develops with sellers holding steadily. Motor gasoline feature, nautral gasolines strong.
Refining and Marketing News 124
Gallonage Good in Chicago, Prices Unchanged 126
By J. B. Waldo
Eastern Gasoline Less Strong, Due to California Shipments 127
By N. O. Fanning
Refinery and Crude Prices 128-129
Tank Wagon Quotations 130

ARTICLES OF GENERAL INTEREST

The Advertisers Index 17
Natural Gas Developments 60
Men Known in Oildom and Personals 62
Equipment and Supplies 66
Progress in Standardization 68
Thomas Midgley, Jr., Answers Ethyl Gasoline Attack 70
Cracking of Mexican Crude Expected on Extensive Scale 80
Progress in Petroleum Research 82
Gulf Port Shipments in March 92
Rumanian Government Explains New Law 104
Classified Want Advertisements 118-119-120
Oil Securities More Active and Strong 122
By N. O. Fanning
Statistics of Crude Petroleum for March 123
Dependable Mid-Continent States Make Great Showing 138
Mexican Shipments in March 140
Crude Petroleum Statistics 152

BE A REGULAR READER

The OIL and GAS JOURNAL Tulsa, Okla.

You are hereby directed to mail The Oil and Gas Journal to me for.....year. Enclosed find remittance $.....

Classify my interests as checked by me.
.....Producing .....Refining
.....Equipment .....Marketing

Name.....
Address.....
City.....

$6 a Year
$3 6 Month

Another Decline in Light Oil Output

Highest daily average estimated production this year, week ended May 2, 2,176,451 bbls. Lowest January 3, 1,911,730 bbls.

Gain at Smackover Much Smaller Than During Previous Two Weeks. California Still Important Factor

By Andrew M. Rowley

Highest daily average estimated light oil production this year week ended January 17, 1,525,220 bbls. Lowest, May 2, 1,409,898 bbls.

A further substantial decline in the production of light gravity crude oil in the United States during the past week while the deep sand output of the Smackover Field failed by 50,000 barrels a day to measure up to its increases of the two previous weeks is resulting in a much better feeling in both the crude and refined oil markets and is the paramount factor in preventing any decline in prices of oil securities. Operators throughout the country are realizing more every day the importance to the general situation of the steady decrease in the output of light gravity oil on which the main crude oil price schedule is based and there were indications early this week that more concerns, becoming somewhat apprehensive regarding their future requirements for crude with a high gasoline content, were considering the advisability of paying premiums over the posted price for crude of a gravity especially suitable for their needs.

The gasoline market, in the Mid-Continent area at least, showed much greater strength early this week with the decline in light oil production as one of the basic reasons. The continued heavy shipments of California crude and refined oils to Atlantic Seaboard ports continues to exert a great influence on both crude and refined oil markets and is reflected in the Mid-Continent by somewhat curtailed buying of both crude and gasoline on the part of large eastern purchasers who, otherwise, would be turning to the Mid-Continent for more of their requirements.

The new deep sand area at Smackover began to show a decline in output at the beginning of this week, the production for the 24 hours ending Saturday morning being estimated at 299,000 barrels; for Sunday, 287,000, and for Monday 277,000 barrels. However, fluctuations in production in that area are to be expected and operators in general are more interested in the fact Oklahoma showed a substantial decline in output and in developments in the North Texas area, where the Reagan County Field has been making steady gains and where other operations are resulting in good production of high gravity oil.

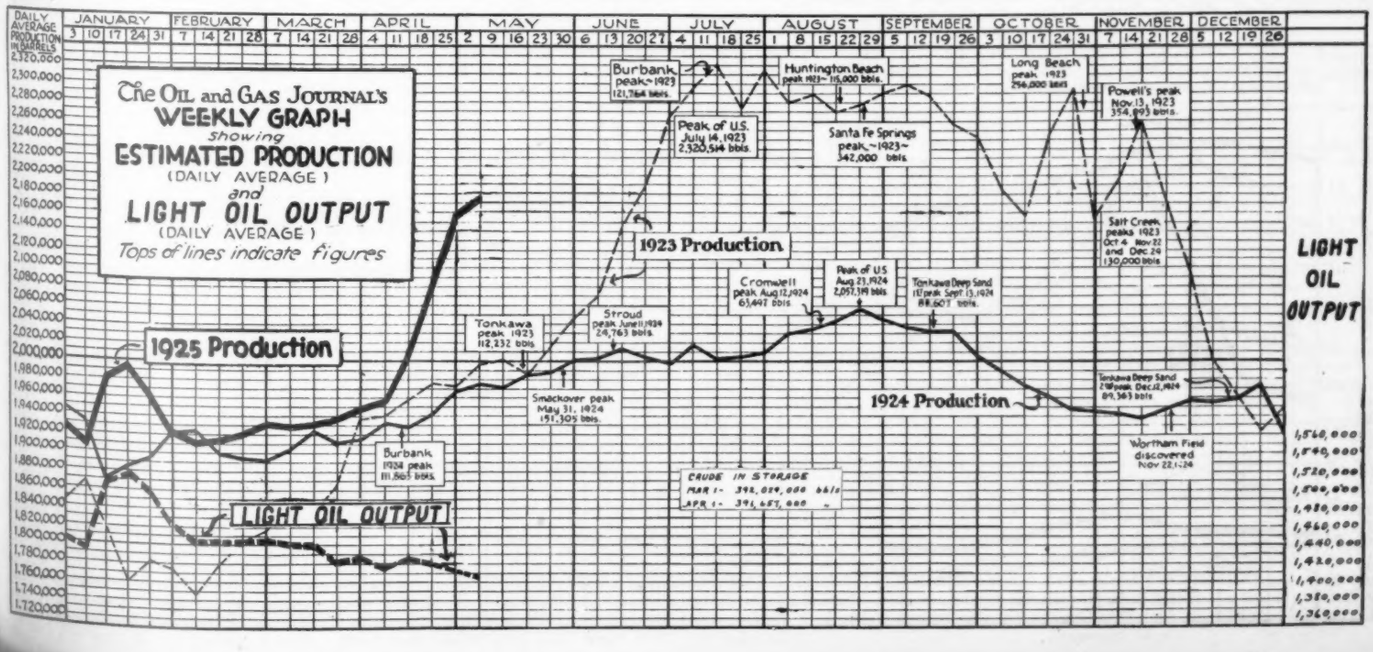
California is still a most important factor in the general situation and the completion of three good wells in as many different fields in that State last week indicates it is folly to expect much of a decline in production for California for a long time.

PRODUCTION IN THE UNITED STATES

Estimated daily average production of light and heavy gravity crude oil in the United States for the week ended May 2, and a comparison with the previous week follows:

	May 2		April 25	
Oklahoma—	**Light**	**Heavy**	**Light**	**Heavy**
Tonkawa	61,745		67,460	
Burbank	58,220		59,970	
Other Osage Fields	32,455		33,330	
Cushing and Shamrock	22,145		21,905	
Bristow and Eastern Bristow	34,115		34,135	
Cromwell	41,910		41,860	
Papoose	24,365		26,170	
Northern Miscellaneous	109,245		109,220	
Southern Fields	63,170		63,185	
Total Oklahoma	447,370		457 235	
North Louisiana	52,080		50,772	
Arkansas—				
El Dorado and Calion	9,200		9,285	
Smackover Light	30,000		30,530	
Smackover Heavy		312,820		284,820
Stephens and Nevada	3,500		3,515	
Total Arkansas	42,700	312,820	43,330	284,820
North Central Texas	157,795		157,390	
Powell	52 215		52 600	
Mexia, Currie, Richland, etc.	27,810		28,770	
Wortham	54,200		56,700	
Kansas	89,485		87,765	
Total Mid-Continent Area	923,655	312,820	934,562	284,820
Gulf Coast		101.068		101,838
Southwest Texas		43,665		45,495
Eastern	105.225		104.450	
Rocky Mountain Area	90,518		90,360	
California—				
Santa Fe Springs	48,500		48,000	
Long Beach	114.000		114,000	
Huntington Beach	42,000		42,000	
Torrance		37,000		38,000
Dominguez	45,000		46 000	
Rosecrans	19,000		18 000	
Remainder of State	22,000	272,000	20,000	270,000
Total California	290,500	309,000	288,000	308,000
Total United States	1,409,898	766,553	1,417,372	740,153
Grand Total	2,176,451		2,157,525	

→ Total Increase, 18,926 Bbls.; Light Oil Decrease, 7,474 Bbls. ←


The Oil and Gas Journal's
WEEKLY GRAPH
showing
ESTIMATED PRODUCTION
(DAILY AVERAGE)
and
LIGHT OIL OUTPUT
(DAILY AVERAGE)
Tops of lines indicate figures
1925 Production
1924 Production
1923 Production
LIGHT OIL OUTPUT
Burbank peak~1923 121,764 bbls.
Peak of U.S. July 14, 1923 2,320,514 bbls.
Huntington Beach peak 1923~115,000 bbls.
Santa Fe Springs peak~1923~142,000 bbls.
Long Beach peak 1923 256,000 bbls.
Powell's peak Nov. 13, 1923 334,895 bbls.
Salt Creek peaks 1923 Oct 6 Nov 22 and Dec 29 130,000 bbls
Tonkawa peak 1923 112,232 bbls.
Stroud peak June 11 1924 24,763 bbls.
Smackover peak May 31, 1924 151,305 bbls.
Burbank 1924 peak 111,865 bbls.
Cromwell peak Aug 12, 1924 63,497 bbls
Peak of U.S. Aug 23, 1924 2,057,319 bbls
Tonkawa Deep Sand 1st peak Sept 13, 1924 88,607 bbls.
Tonkawa Deep Sand 2nd peak Dec 12, 1924 89,363 bbls
Wortham Field discovered Nov 22-'24
CRUDE IN STORAGE
MAR 1- 392,039,000 bbls
APR 1- 391,467,000 "

Oklahoma Refined Market Tone Firm

Increased Buying Develops With Sellers Holding Out Steadily for Their Price. Motor Gasoline Feature

By Neil Williams

Additional refining and marketing news will be found in the section starting on page 124.

Accompanied by a wave of buying, a firmer tone is sweeping the Oklahoma (Group 3) refined market, focusing on the 58-60 437 U. S. Motor gasoline. From a weakening and price-slipping condition the early and middle part of last week, the situation almost over night took on a healthy appearance and by Tuesday it seemed gasoline bid fair for substantial advances in prices.

With buying of motor gasoline fairly general over Oklahoma, price concessions, which were prevalent up to the middle of last week, had disappeared entirely by the last of the week and by Monday night nearly all the 10¼-cent gasoline, which previously had been plentiful, had been taken off the market. Tuesday the sellers seemed to be in complete control of the market and were holding out strongly for 10½ cents and more with buyers seemingly content not to hunt far for any more 10¼-cent gasoline.

Early last week, all market observers agreed that a crisis had been reached in the market but the situation seemed to bend toward the bears when some 10-cent sales were reported and when it was known there was an abundance of the 10¼-cent product. When jobbers and buyers still held off buying, and, although the first of the month was at hand, few sales for May delivery were made, sellers had resolved themselves to a bearish summer.

However, just as the situation seemed hopeless and a cut in tank wagon prices by the Standard of Indiana appeared the only recourse, several large orders came in which suddenly turned the market upward. Among the sales was a 1,000,000-gallon order by Greenslade Oil Co., of Detroit. No sooner had this sale been made known than jobbers and other buyers, who had been considered an uncertain factor in the situation, began a rush to buy. It had been felt generally that the jobbers' storage was low but it seemed the jobbers and brokers had little faith in market conditions, even after the Standard of New Jersey purchase of 15,000,000 gallons a month ago, and could not be induced to come into the market.

Steadying Factor

The market situation has resulted in a condition which many sellers believe will resolve itself into a more steady market factor. Although there was spirited buying of gasoline the early part of the week, there were few sales contracted for delivery over the month. Both buyers and sellers were desirous only to buy for short periods on more or less of a spot market basis. One refiner declared that he would not sell over a 10-day period at the most. Whether this policy of buying is only temporary remains to be seen, but many feel that by this plan the uncertain storage factor would be eliminated to some extent, and would serve to take more or less of the speculative element out of the industry.

Despite the strength of the motor gasoline market, most market observers admit the situation is not out of danger and that the market structure can be held up only by a continuation of the present buying spell through May. It is known that Mid-Continent refiners have increased crude runs to stills at least 15,000 to 20,000 bbls. daily since the recent New Jersey purchase and it will require a much increased consumption to offset this extra gasoline production.

Export buying and demand for the New Navy gasoline has played a leading part in strengthening the market, and, if this should fall off, market observers think the present domestic demand would hardly be sufficient to take up the slack in the gasoline production. Among the large purchases of U. S. Motor gasoline for export was that by the Imperial Refining Co., which completed a purchase of 100 cars Monday.

Export Buying

Although the U. S. Motor situation is the feature of the refined market, there also is still some good buying of 64-66 both 390 and 375 end points, by exporters. This product seems to be unusually scarce with 13 cents apparently the rock bottom price for export. The buying of this gravity has held the market of the higher gravity gasoline firm along with the 58-60, 437 grade.

The advance and strength in natural gasolines, particularly Grade C, continues to be one of the outstanding factors in the Group 3 market. In sympathy with the increase in straight run products, natural gasoline sellers are holding out for and getting higher prices for their products. All grades reflected price increases during the week and Tuesday appeared perfectly firm.

Another point of interest in the Group 3 market was in kerosene. Although all grades still are reported sluggish and weak, buyers are unable to obtain any quantity to speak of at low figures of last week.

An uncertain element still prevails in the fuel oil market. While the majority of market observers express the opinion that the market is demoralized, there still are a few who see a ray of hope and feel that better times await the product in the near future. To substantiate this latter view, the decline in prices this last week perhaps has not been as great as in the last few previous weeks. But on the other hand, there has been little activity and movement the past week and nearly every buyer seems anxious to hold off as long as possible, waiting further reductions.

Waiting Developments

While many, both buyers and sellers, see only a strong market to extend until past May 20, some of the more conservative observers are watching this week for important developments. The latter still believe the crisis is not passed and expect another week to tell the story.

What effect the crude production is having on the present refined market is only a matter of conjecture. While it is admitted it cannot have any immediate

(Continued on Page 130)

REFINED MARKET BAROMETER

Increased buying of U. S. Motor gasoline is instilling a stronger tone into gasoline markets over the country. The strengthening in Group 3 (Oklahoma) has been followed by actual advances in prices while in some portions only tightening conditions have been felt. The tendency toward weakening, in evidence the middle of last week, has disappeared entirely but market observers admit the gasoline market is not out of danger yet. Decreased consumption of gasoline in Pennsylvania and New York has been reported but so far prices remain firm. Continued heavy Smackover production still is upsetting the fuel oil market with every district affected. Movements of kerosene are small in the Mid-Continent but strong in eastern parts of the United States. Prices are changed only slightly. Natural gasolines show firmness but gas oil and distillates continue soft.

Mid-Continent—The wave of buying the latter part of last week has caused substantial advances in Oklahoma (Group 3) prices of U. S. Motor gasoline. Prices in Kansas, North Texas, Arkansas and North Louisiana unchanged but market is stronger. Export buying causes shortage of 64-66 gravity and helps to hold market on other higher gravities. Kerosene unchanged except in Oklahoma, where slight price advance is felt. Distillates and fuel oil continue to weaken.

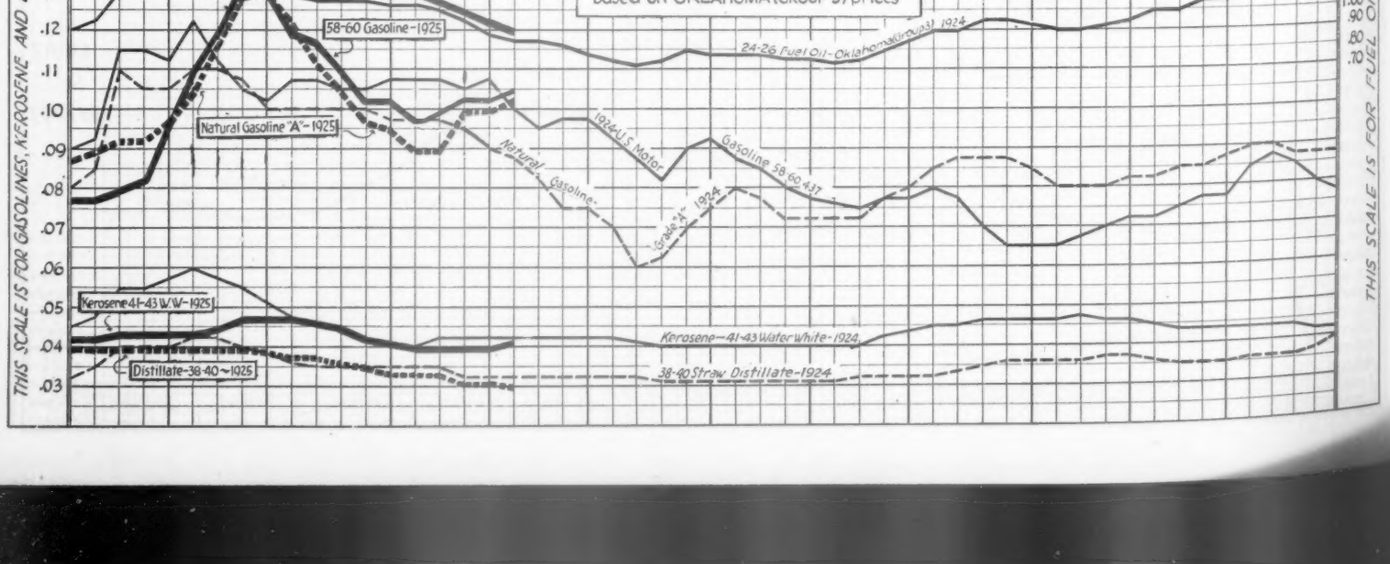
Atlantic Seaboard—Refined market quiet. Gasoline supply increases but prices are unchanged. Improved export trade stimulates kerosene market. Demand for lubricants disappointing and gas oil is lower. Bunker oil is cut 5 cents with Diesel oil soft in sympathy.

Gulf Coast—Prices unchanged but market is weaker, especially in fuel oil.

Pennsylvania—Colder weather decreases gasoline consumption but refinery demand continues firm. Kerosene demand strong but fuel oil is off and prices weaker. Increased activity makes wax stronger. Steam refined active but filtered stocks and neutrals barely holding their own.

California—Heavy Smackover production at present is only menace to refined market. Straight run gasoline and natural gasolines fairly strong.

Chicago—Gasoline firm. Fuel oil easy but no real change in prices. Natural gasoline very strong. Kerosene market unchanged.


CENTS PER GAL
JAN. FEB. MARCH APRIL MAY JUNE JULY AUG. SEPT. OCT. NOV. DEC.
DOLLARS PER BBL.
THIS SCALE IS FOR GASOLINES, KEROSENE AND DISTILLATE
THIS SCALE IS FOR FUEL OIL
The Oil and Gas Journal's
WEEKLY CHART showing
REFINED MARKET TREND
~as indicated by 5 products~
based on OKLAHOMA (GROUP 3) prices
24-26 Fuel Oil-1925
58-60 Gasoline-1925
Natural Gasoline "A"-1925
Kerosene 41-43 W.W.-1925
Distillate-38-40-1925
24-26 Fuel Oil-Oklahoma (Group 3) 1924
1924 U.S. Motor Gasoline 58-60 437
Natural Gasoline "C" 1924
Kerosene-41-43 Water White-1924
38-40 Straw Distillate-1924

Gasoline Substitute Possibilities

Conservation Board's Questionnaire Directs Attention to Progress Toward Synthetic Motor Fuels. Germany Offers Methynol.

By L. M. Fanning

While the Federal Oil Conservation Board in response to its latest questionnaire to the petroleum industry is receiving from technical authorities answers covering the supply and use of gasoline substitutes, it is of interest to note that the latest gasoline substitute possibility to reach public notice is a synthetic alcohol, known as methynol, which is being produced in Germany and imported into this country in increasing quantity. The principal cause for interest in methynol in chemical circles is the apparent low cost of production.

German manufacturers exported to this country, principally through the port of New York, more than 130,000 gallons of methynol during February and March. The product is manufactured by a newly developed process at from somewhere between 18 and 26 cents a gallon, according to reports reaching this country. The statements that the product is non-poisonous and that methynol can be used for beverage purposes without harm is disputed by chemists but the prohibition authorities are stated to be concerned in the matter, particularly as there is doubt among the legal experts of the Internal Revenue Bureau whether the new product is covered by the prohibition laws.

Investigation brings out that there has been little experimentation in this country of the possibilities of methynol as a motor fuel, probably chiefly because of its price being entirely out of line with gasoline. Methynol, produced in the United States, is generally sold at about 75 cents a gallon. The tariff on what is known as methynol, as fixed by the Fordney-McCumber bill, is 12 cents a gallon, and under the elastic provisions of this law the rate could be raised only by 50 per cent or to 18 cents a gallon. This, it is pointed out, would not prevent the Germans, if they can manufacture at from 18 to 26 cents a gallon, from shipping the product here at considerably under the present scale of price of methynol produced in this country, but the product would still be so much higher than the price of gasoline that it could not seriously compete in the United States even if large quantity manufacture were attained unless it should turn out that it produces considerably more power than gasoline.

An Anti-Knock Fuel

According to information picked up in chemical circles, methynol acts somewhat similarly to ethyl as an anti-knock fuel but that tests show corrosive tendencies and objectional odor in combustion. Used in motor engines, methynol would be a direct fuel and not a blended fuel with gasoline and for this reason the quantity available and the price are even more emphatically factors removing it from serious competition with gasoline.

However, in Germany and other European countries the use of alcohol as a motor fuel is not unusual, and it is of interest to the American oil industry as to what effect low-cost quantitative manufacture of methynol would have on the gasoline markets abroad where the tariff barrier is against the imported gasoline.

Attention was first attracted to methynol produced under the new process when imports to this country jumped from virtually nothing to more than 60,000 gallons in February. An investigation showed that this production was, in fact, a new venture, for all imports of German methynol during 1924 totaled only 48 gallons, valued at $29. The figures for January, February and March of this year give the picture of the development. They follow: January, 40 gallons, valued at $26; February, 62,971 gallons, valued at $29,420; March 69,886 gallons, valued at $26,976. These figures show the values put upon the product for the purpose of collection of customs under the tariff law and do not represent production cost.

A further investigation has shown that the Germans already have developed this industry under the new process to perhaps a production of 750 tons, or about 225,000 gallons a month. It is generally accepted that methynol weighs about 6½ pounds to the gallon. Thus the United States received about one-fourth of the entire German production in February and March.

The present activities in Germany are credited to a company known as the Badische Anilin und Soda Fabrik. The basic German patents for the production of methynol were seized during the World War by this Government and turned over to the Chemical Foundation, a semi-official body organized to take over these patents. But the basic patents do not include the additional secrets which may have been unearthed by German chemists to make cheaper production possible.

Dr. Marston T. Bogert, Professor of Organic Chemistry at Columbia University, says methynol is synthetized from carbon monoxide, the asphyxiating agent of ordinary illuminating gas. Its chemical combination is simple, four atoms of hydrogen being added to the one atom of carbon and one of oxygen. The great feature developed by the Germans, according to Dr. Bogart, is the secret of producing menthanol on a large scale and at low cost from gasses produced by the use of coal in blast furnaces.

French Process, Too

The French also have a patented process for the manufacture of methynol, the patents being held by a Frenchman named Petard. The English also have a patented process. Neither of these, however, has been, as yet, put into production on any large scale. Claims have been made that the French patents are for a process under which production is even cheaper than under the new German process, but this has not been demonstrated to the satisfaction of experts.

Wood alcohol, methynol and other similar products have a wide variety of uses in industry. Unblended alcohol can be used as fuel in engines designed for higher compression than is ordinarily used with gasoline. Commercial alcohol can not be blended directly with gasoline, but mixtures of gasoline, alcohol and benzol that will not separate on standing are being used in a limited way at the present time, and this use of alcohol will probably grow, it is stated, if the price of motor gasoline increases or the cost of making alcohol decreases. The calorific value of alcohol is lower than that of gasoline, but this is offset by its high efficiency.

Alcohol can be produced from a large number of vegetable waste products, and probably can also be obtained in quantity from wood wastes, such as sawdust, although this has not yet been demonstrated on a large scale. At present the production of alcohol is limited by the availability of the raw material suitable for its manufacture. It is to be noted that land on which plants for the production of alcohol are grown, is no longer usable for the production of food.

A present, gasoline blended with commercial benzol recovered at by-product coke ovens is being marketed as a satisfactory motor fuel. The claims for this fuel are that it eliminates the knock because it burns with a steady and even increase in pressure; that it gives more power because its heat units are rendered almost entirely available through rapid vaporization in the carburetor, that less carbon results and that there is no crank case dilution.

Growing Benzol Use

It is admitted by authorities that if a sufficient supply of benzol were available there would be no reason for special anti-knock compounds. The production of crude light oil from coke ovens in 1924, according to figures of the United States Geological Survey just made public, totaled 123,000,000 gallons. Of this quantity probably slightly over 100,000,000 gallons was motor benzol. The sub-divided figures for 1923 showed benzol production as follows: Crude, 4,503,000 gallons; refined, 12,364,000, and motor, 80,468,000 gallons; total, 97,335,000 gallons.

As by-product coke ovens continue to take the place of beehive ovens, the production of benzol and the quantity of motor benzol available will increase, but there is no likelihood of benzol replacing gasoline, and products from coal will doubtless continue only of minor aid in supplying substitutes for petroleum. It has been estimated that if all the coal mined in the country for a year were coked in by-product ovens, the quantity of motor fuel that might be made available would amount to only about 20 per cent of the annual domestic consumption of gasoline. The development of low temperature coal-carbonization processes may, however, greatly increase this potential yield.

The by-product coke industry in this country was a war development, resulting from the cutting off of German supplies of coal-tar products. It means vast new construction of by-product ovens and the replacing of beehive ovens, still continuing. The extent of the change in the coke industry is shown by the 1924 figures which reveal a remarkably high percentage of the total output of coke obtained from by-product ovens. In 1913, by product plants contributed by 27.5 per cent of the total; in 1924, they contributed 77.9 per cent. The beehive coke industry is thus becoming more and more an auxiliary source of supply, called upon when the output of the by-product ovens is not sufficient to meet the demand. Even in 1923, a year of large demand, the beehive coke industry supplied but 34 per cent of the total.

After the war large surplus supplies of benzol derived from by-product coke manufacture were available and this excess production was turned into motor fuel channels. The Barrett Co. contracted for benzol from the bulk of the manufacturers and developed a market for it among distributors of gasoline. The United States Steel Corp. is now marketing its benzol direct to oil companies. The demand for benzol for gasoline-blending purposes far exceeds the supply, and the marketing of motor benzol is largely confined to points near coke production such as the Pennsylvania, Ohio and Chicago districts.

The price of benzol is determined by the prevailing price of gasoline. The present price at the ovens is around 22 cents a gallon. The usual mixture of benzol with gasoline is in equal quantities although 40 per cent benzol and 60 per cent gasoline is sometimes used as a satisfactory proportion. Characteristics of the gasoline with which benzol is being blended determines the exact proportion. The fuel is usually sold under trade names indicating the benzol content, and commands a premium of from 3 to 6 cents over the prevailing price of gasoline.

CONSERVATION BOARD APPRECIATES WEALTH OF MATERIAL IN JOURNAL REPLY

Mr. Frank T. Lauinger,
President, The Oil and Gas Journal.
My dear Mr. Lauinger:

The Secretary of the Interior, as chairman of this board, has asked me to acknowledge receipt of the joint reply of yourself and Mr. Robert W. Egan, to the questionnaire addressed to you by the board relative to general petroleum conditions. The response of yourself and Mr. Egan is very much appreciated, and in view of the wealth of material you have so constructively presented, I am confident the board will be indebted to you gentlemen for your courtesy and cooperation.

Sincerely yours,
E. S. ROCHESTER, Secretary.

GASOLINE PRICE WAR MAY FOLLOW TANK WAGON CUT

NEW YORK, May 5.—What may result in a lively gasoline war in certain cities of this territory began today when The Texas Co. reduced the tank wagon price of gasoline 2 cents a gallon. Although no other companies had met the cut late today, it was expected they soon would do so.

The reduction effects the tank wagon price at New York City, Stamford, Conn., and Springfield, Mass. The cut brings the tank wagon price from 20 to 18 cents a gallon in these cities.

PROGRAM FOR GAS MEN

A tentative program has been announced for the annual convention of the Natural Gas Association of America to be held at Atlantic City May 18 to 21 inclusive. At the first general session of the convention on May 19, P. G. Gossler, Chairman of the Board of the Columbia Gas & Electric Co., of New York City, will deliver an address on "The Value of Service." C. F. Kettering, president of the General Motors Research Corp., of Dayton, Ohio, will speak at the general session on May 20 on "Fundamentals of Heat Application." At this session Henry L. Doherty of New York will speak on "House Heating and Industrial Gas."

"Gasoline Crude" Output is Declining

Industry is Again Entering a Cycle of Heavy Oil Production. One Third of Total is of Low Gravity.

By James McIntyre

The month of May is the beginning of the period of large gasoline consumption, which will increase as the summer comes on, reaching a peak in August, but continuing large until the end of September, with October showing about the same consumption as May. During the six months from May to October, both inclusive about 58 per cent of the total consumption of the year is effected.

The greatest gasoline consumption in history is expected to take place this year. The latest refining statistics, covering a period of a month are those for February, issued by the United States Bureau of Mines which show a domestic demand of 542,426,977 gallons for the 28 days as against 402,703,876 gallons for the 29 days of February, 1924. This shows an increase of 39 per cent in the average daily consumption of gasoline in the United States in February this year over the same month last year. The consumption in January and February of this year combined was about 29 per cent greater than for the first two months of 1924. Whether this percentage of increase will maintain through the year must be decided by the future, but that there will be a large increase in consumption is confidently expected by the industry.

High Grade Crude Decreasing

Now, what about the production of crude from which the gasoline must be made? At the beginning of the year it was expected that production this year would fall off about 20,000,000 bbls. from that of last year, but the discovery of a new and deeper productive sand in the Smackover Field a few miles north of the city of El Dorado, Ark., which on May 1 was yielding around 250,000 bbls. a day of low gravity oil with the peak not yet reached, has set aside all thoughts of a reduction in output as great as 20,000,000 bbls. and induces the belief that the production this year may equal that of last year if it does not really exceed it.

Regardless of this, however, the fact remains that this year's production of crude from which gasoline may be extracted by straight refining processes should be below that of last year unless unexpected large fields are uncovered between now and the late fall.

Separating the production of crude into grades some interesting changes are noticeable in the output of May 1 compared with the average daily output of last year.

Taken as a whole the production of crude above 28 degrees or that which is usually called light oil, suitable for the manufacture of gasoline by straight refinery run was 9,620 bbls. a day less than the average daily production of the same grades of crude over the whole of last year, while on May 1 the total decline in gasoline crudes including those lower gravity oils from which more or less gasoline may be refined in straight run process compared with the daily average of last year was 46,948 bbls. a day or at the rate of over 16,000,000 bbls. a year.

The Greatest Falling Off

The greatest falling off as shown in the accompanying table was in the grades between 30 degrees and 37.9 degrees. A decrease of 102,370 bbls. is seen in the production of oil of 36 to 37.9 degrees, a 30,007-bbl. decline in oils of 34-35.9 gravity; a 40,495-bbl. drop in 32-33.9 grade and 36,160 bbls. in oil grading from 30 to 31.9, a total decline of 207,982 bbls. a day in crudes ranging from 30 to 37.9 degrees. The very highest gravity crudes, (above 43 degrees), showed little change, while there were considerable increases in the production of crudes between 38 and 42.9 inclusive and in the 28 to 29.9 grades, but they were insufficient to offset the big falling off in the other grades named. The low gravity crudes suitable for straight refining gasoline production showed a de-

(Continued on Page 121)

Current Production of "Gasoline Crude" Compared With the Average Production in 1924

Light Oil	Daily Prod. May 1 1925 Bbls.	Average Daily Prod. 1924 Bbls.
43° and above	56,480	54,358
41° to 42.9°	137,950	79,967
40° to 40.9°	35,102	32,892
38° to 39.9°	298,758	229,215
36° to 37.9°	284,369	386,739
34° to 35.9°	133,695	163,602
32° to 33.9°	128,365	168,860
30° to 31.9°	70,185	45,025
28° to 29.9°	27,315	21,211
Total	1,172,219	1,181,869
Heavy Oil of High Gasoline Content		
20° to 27.9°	228,500	288,031
Total	1,400,719	1,469,900
Heavy Oil of Lower Gasoline Content		
20° to 27.9°	198,500	176,267
Total	1,599,219	1,646,167
Heavy fuel oil, lube oils and lighter oils not suitable for the production of gasoline by straight refining processes	551,673	322,887
Total	551,673	322.887
Total production	2,150,892	1,969,054
Decrease in daily production of crude oil suitable for straight refining (gasoline crude		46,948
Increase in daily production of crude oil not suitable for the production of gasoline by straight refining processes		228,786

Production of the United States by Gravity	Current Daily Prod.	Avge. Daily Prod. 1924
43 degrees and above—		
Fields of New York, Pennsylvania, West Virginia and southeastern Ohio	45,200	44,806
Garber, Okla.	7,700	5,052
Hogback, N. M.	530	223
Cat Creek, Mont.	3,050	4,277
Total	56,480	54,358
41 to 42.9 degrees—		
Billings, Okla.	395	521
Greybull - Torchlight, Wyo.	60	34
Lance Creek, ..Wyo...	1,770	1,965
Craig, Colo.	810	634
Tonkawa, Okla	67,460	61,240
Seely-Westcott, Kans...	4,845	5,231
Paulhamus-Agard, Kans.	3,140	4,126
Potwin, Kans.	715	534
Wortham, Tex.	57,100	2,499
Currie, Texas	1,410	2,910
Florence, Colo.	245	273
Total	137,950	79,967
40 to 40.9 degrees—		
Blackwell, Okla.	2,455	3,072
Stroud, Okla.	3,325	10.155
Cowley County, Kans...	15.250	6,192
Pixley-Teeter, Kans. ..	5,400	1,762
Richland, Texas	5,400	9,338
Braman, Okla.	2,150	482
Palo Pinto County, Tex.	122	204
Pioneer, Texas	1,000	1,687
Total	35,102	32,892
38 to 39.9 degrees—		
Fort Collins, Colo.	860	165
Indiana fields	2,500	2,557
Illinois fields	21,600	21,970
Cushing-Shamrock, Okla	21,950	23,864
Cromwell. Okla.	41,860	28,133
Papoose (Wetumka) Okla	26,170	9,623
Wewoka, Okla.	12,466	8,779
Mervine-Ponca City, Ok.	1,375	1,601
Deaner-Lyons, Okemah and Weleetka, Okla.	6,100	6,300
Rosecrans-Athens, Calif.	17,000	1,698
Fox-Bush, Kan.	2,630	3,498
Blankenship, Kans.	1,050	1,254
Leon-Weaver, Kans. ..	835	1,037
Russell County, Kans...	1,500	635
Thrall-Burkett, Kans...	5,650	6,928
Virgil, Kans.	4,740	6,062
Sallyards, Kans.	1,709	1,610
Rice County, Kans.	80	70
Burkburnett, Tex.	14,800	18.808
Archer County, Tex.	41,650	30,772
Electra, Tex.	17,300	19.858
K.M.A.-Iowa Park, Tex.	4,170	3,890
Corsicana, (light) Tex.	450	470
Petrolia, Tex.	375	342
Wilbarger County, Tex.	6,475	814
Caddo, Tex.	4,550	6,110
Clear Fork, Tex.	6,337	6,833
Gunsight, Tex.	64	75
Ranger-Eastland, Tex..	6,925	7,724
Callahan County, Tex..	3.960	1,334
Reagan County, Tex. ..	18,000	2,899
Jack County, Tex.	20	34
Pilot Butte, Wyo.	No Runs	58
Rex Lake, Wyo.	No Runs	75
Sipe Springs, Tex.	207	211
Desdemona, Tex.	2,675	3,124
Artesia, N. M.	725	....
Total	298,758	229,215
36 to 37.9 degrees —		
Salt Creek, Wyo.	59.160	84,371
Burbank, Okla.	59,970	84,169
Powell, Tex.	52,600	90,641
Mexia, Tex.	18.500	28.744
Kentucky fields	15,000	16,168
Grass Creek, Wyo.	4,220	2,979
Osage, Wyo.	390	369
Rock River, Wyo.	3,380	3,198
Teapot Dome, Wyo.	1,780	2,460
Rising Star, Tex.	108	103
Big Muddy, Wyo.	3,320	3,367
Cleveland, Keystone, Otoe and Jennings. (Pawnee County), Okla.	18,016	11,982
Yale, Quay, Ingalls & North Cushing (Payne County), Okla.	5,900	6,596
Lima and Central Ohio	14,000	14,544
Okmulgee and Muskogee fields, Okla.	21,000	21,704
Caddo, DeSoto and Red River, La.	6,350	15,314
Sluss & Smock, Kans...	675	730
Total	284,369	386,739
34 to 35.9 degrees—		
Bristow, Okla.	28,500	40,245
Osage County, Okla., outside of Burbank..	34.200	44,625
Tulsa District, Okla. ..	9,950	11,191
Brock, Okla.	1,900	1,083
Duncan, Okla.	6,200	7,808
Peabody, Elbing, Robinson, Augusta, Wilson, Dunkle,,Douglass, Kans.	11,850	12,940
Harvey County, Kans...	120	137
Haynesville, La.	14,400	17,158
Homer, La.	6,790	7,582
Hambro, Okla.	560	339
Kentucky fields	2,975	3,049
Breckenridge, Tex.	8,800	10,940
Shackelford County, Tex	2,550	3,289
Panhandle, Tex.	2,480	777
Coleman County, Texas.	70	171
Brown County, Texas ..	1,270	674
Mule Creek, Wyo.	No Runs	487
Byron, Wyo.	60	47
Elk Basin, Wyo.	940	1,183
Ferris, Wyo.	80	77
Total	133,695	163,602
32 to 33.9 degrees:		
Santa Fe Springs, Calif.	48,000	72,130
Hewitt, Okla.	15,700	18,923
Graham-Fox, Okla.	12,500	16,481
Walters, Comanche, Cement, Sayre, Okla. ..	3,330	4,190
Florence - Urschell, Covert-Sellers, El Dorado, Towanda, Nuttle-Koogler, Kans.	13,000	14,911
Bartlesville dist., Okla.	6,050	6,822
Eastern Bristow, Okla. .	6,700	6,903
Glenn Pool and Kiefer, Okla.	9,000	9,822
El Dorado, Ark.	9,345	12,854
Kentucky fields	1,000	1,010
Lost Soldier, Wyo.	3,700	4,814
Total	128,325	168,860
30 to 31.9 degrees:		
Nowata and Chelsea district, Okla.	5,500	6,092
Dominguez, Calif.	46,000	18,611
Healdton, Okla.	15,150	16.501
Allen and Kilgore, Okla.	310	487
Sunburst, Mont.	3,225	3,334
Total	70,185	45.025
28 to 29.9 degrees:		
Eastern fields	12,900	12.352
Milroy, Okla.	440	504
Cotton Valley and Elm Grove, La.	9,100	4,530
Stephens, Ark.	2,000	2,344
Sholom Alechem, Okla. .	1,910	607
Corsicana, heavy, Tex. .	285	297
Hamilton Dome, Wyo. .	680	577
Total	27,315	21,211
20 to 27.9 degrees, from which gasoline may be extracted by straight refinery process:		
Smackover, light, Ark. .	30,500	28,000
Long Beach, Calif.	114,000	164,240
Huntington Beach, Calif.	42,000	47,906
Midway-Sunset, Calif. ..	104,000	102,363
Montebello, Calif.	28,000	17,023
Murphy-Coyote, Calif. .	20,000	15,529
Elk Hills, Calif.	38,000	37,152
Torrance, Calif.	42,000	47,885
Inglewood, Calif.	3,500	29
Lost Hills-Belridge	5,000	4,171
Total	427,000	464.298
Heavy fuel oil, lub oils and lighter oils not suitable for straight refining processes:		
California	92,000	99,873
Smackover, heavy, Ark..	300,000	87,158
Bellevue, La.	4,000	4,869
Robberson and Loco, Okla.	4,780	5,717
Nevada, Ark.	1,610	1,246
Gulf Coast and South Texas	147,333	119,950
Mitchell County, Tex. ..	1,580	1,220
Wyoming, heavy	370	854
Total	551,673	320,887

Callahan County

Isenhower Pool in Texas Unique Field

Complete Wells in Less than Week at Cost $1,350. Throckmorton County Will Bear Watching.

By C. D. Lockwood

WICHITA FALLS, Tex., May 4.—When one of the largest producing concerns in the State of Texas pays $600,000 cash for 80 acres of production it is interesting to investigate the territory in which that production is located. But when the oil for which that amount of coin of the realm has been paid is found to be coming from sand less than 500 feet in depth, the transaction assumes an appearance decidedly extraordinary.

Such are the circumstances in the Isenhower Pool, near Putnam in Callahan County, Texas. This prolific little pool is better known as the Putnam shallow sand area and is said to be the best pool in Texas at anything like its depth. If anyone knows of another field in this State producing from a level of 450 to 515 feet, yielding an average of nearly 3,300 bbls. daily of 40.2 degrees gravity crude; whose wells can be drilled and put on pumping power in less than a week at a total cost of less than $1,350, the writer would be glad to hear about it so that the honors can be transferred. But to the best of our knowledge and belief, no other such operator's bonanza exists at the present time.

The Texas Co. was the concern which purchased 80 acres in this pool, as reported a week or two ago, for a total consideration of $600,000. Of this amount $375,000 was paid for the north 80 acres shown on the map marked "Texas," in Section 4. The two 20-acre tracts just south of that piece, in Section 4 and Section 7, brought the remainder of the price.

Cisco Firm Discovered Field

The Moutray Oil Co., of Cisco, was originally responsible for discovering this field although A. S. Goodloe actually drilled the discovery well. The geological firm of Foster & Reiter was retained by the Moutray Oil Co. and the Isenhower structure was worked out by Leon English of Foster & Reiter. The Moutray Oil Co. then leased 931 acres, turning 320 acres of the block to The Texas Co. for the drilling of a well. The first well was drilled in the southeast quarter of Section 7. It is shown on the map just to the right of the word "Orphan," and was dry at 2,025 feet in July of 1924.

The second well was drilled by the Moutray Oil Co., and the Junior Oil Co., in the northwest quarter of the same section. While it was also dry, it had enough of a showing from 425 to 450 feet to warrant further drilling and caused Mr. Goodloe to lease the Davis land and to drill the discovery well in the southwest corner of Section 4. This was in the latter part of August, 1924, and the western part of the pool was developed during the fall of last year.

It was thought by some persons that all of the pool laid to the west of Battle Creek, but on Armistice Day of last year, R. A. Duffy of Wichita Falls, who was once a pitcher for the Pittsburgh Pirates, brought in a well which proved the error of that theory. The Moutray Oil Co. and A. S. Goodloe had each turned an interest in a 40-acre tract to him for the drilling of a well. His original well came in for 40 bbls. and continued making that for more than 60 days. Mr. Duffy continued drilling until he had 13 wells on his property averaging 450 to 500 bbls. daily at the time of The Texas Co.'s purchase.

The more expensive of the tracts purchased by The Texas Co. was originally given to Foster & Reiter for services rendered in geological work. They subleased it to L. A. Warren of Cisco, who drilled 14 wells and then sold to John Hooser of Dallas for $215,000 on February 1. Mr. Hooser drilled four additional wells, building the production up to about 900 bbls. before The Texas Co. took it over.

Shallow Drilling Active

The shallow sand is receiving the bulk of attention in Throckmorton, Callahan, Shackelford and Eastland counties now and it is probable that quite a large number of tests will be started up following the rains which have been general over this region and have provided water for operating purposes. However, it is doubtful if operators as a whole realize just what possibilities there are in the shallow sands in these counties, and especially it is probable that few outside of the local district realize what an "operator's delight" a few companies possess at Putnam. Several other structures are being tested in this vicinity now and it is possible, of course, that at least one or two other prolific shallow pools will be opened up in the near future. A good showing has been reported on the Hatchet structure, southwest of Putnam, in a well drilled by The Texas Co., although the showing was drilled through into water.

The one fly in the ointment in this country is the spotted nature of the sands, causing dry holes next to good producing wells. This characteristic is one of the reasons why a structure has to be "felt out" and sometimes several wells have to be drilled before one of them touches the right spot and indicates the direction of the pay streak.

The pay formation at Putnam is a true sand, partly white and partly brown. It is very soft and fine and is found from 450 to 515 feet in depth in the pool, with an average thickness of 10 feet. In some wells it runs as thick as 17 feet. Most of the wells drill on through the sand into the brown lime before they are completed. The sand contains enough gas with the oil to operate the lease but not enough to flow the oil except for a very short time in a few wells.

Have Upper Gas Sand

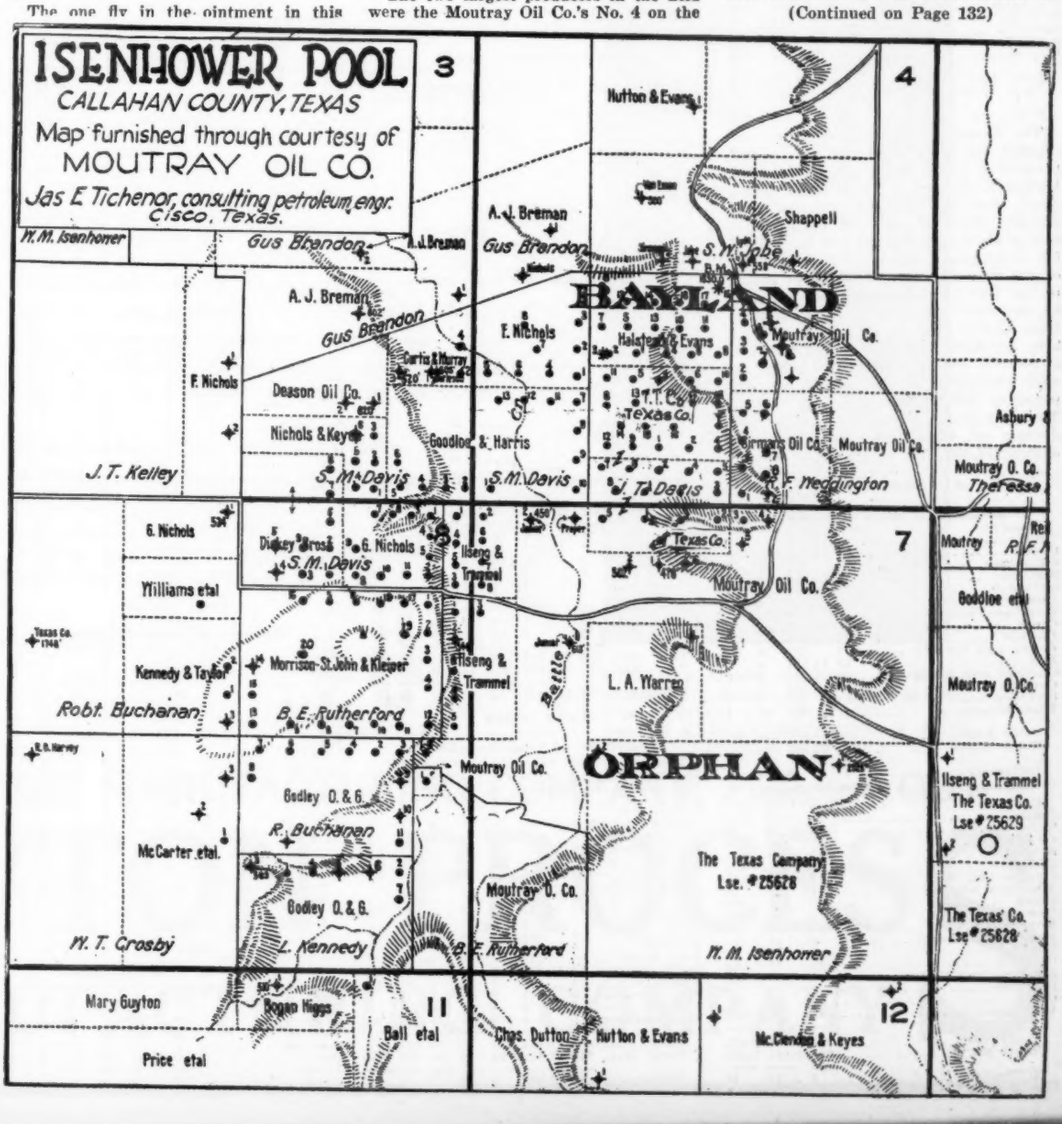
Even if these holes are only 450 feet deep, they have their "upper" sand. It is a gas sand, too, and in some locations, the wells would have made as high as 500,000 feet of gas in this sand at 330 to 340 feet.

The two largest producers in the field were the Moutray Oil Co.'s No. 4 on the Weddington lease, and L. A. Warren's (now The Texas Co.'s) No. 1 on the J. T. Davis. The former pumped 170 bbls. and the latter 172 bbls. The Moutray Oil Co.'s first producer on the Weddington lease came in March 18 for 90 bbls. at 511-23 feet and was still doing 75 bbls. 30 days later

An example of the low cost of operating a lease here is shown by the five wells on this same tract. Last week they were averaging 335 to 350 bbls. daily with a direct-connected Spence pumping power costing $650. The Moutray Oil Co. is now installing a 25 horsepower Reid band wheel power, however, and is fixing up the lease in first class style.

The appearance of several of the leases in this shallow field would make operators in many areas with much higher flush production ashamed of themselves. The tin roofs of power houses shine out like silver dollars among the cactus and the mesquite. Although most of the locations are drilled up, numerous machines still stand over wells that are producing, while shackle rods run out in orderly arrangement to the pumping jacks. The best leases in the field are located on

(Continued on Page 132)



Flush Crude Oil Production Increases

Smackover Field Responsible for Big Gain in Initial Output of Wells Completed During Month of April.

SUMMARY OF ALL FIELDS

Fields—	Comp.	Prod.	Dry	Gas
Eastern	374	1.604	41	79
Lima	59	808	11	2
Indiana	6	89	1	1
Central Ohio	30	171	7	14
Kentucky	178	2,511	46	11
Tennessee	2	125	0	0
Mississippi	7	0	7	0
Illinois	16	172	9	0
Kansas	259	18,860	84	18
Oklahoma	447	89.855	113	42
North Texas	381	31,272	137	9
East Central Texas	57	4,529	22	5
N. Louisiana-Ark.	214	264,507	38	17
Gulf Coast	121	44,513	39	0
Southwest Texas	31	11,025	3	6
Wyoming	42	6,465	3	0
Montana	18	1,045	2	0
Colorado	5	0	5	0
New Mexico	9	2,130	5	0
Total April	2,256	479,681	568	204
Total March	1,688	217.212	465	186
Difference	658	262,469	103	18

Rigs and Wells Drilling

Fields—	Rigs	Drg.	Ttl.
Eastern	157	465	622
Lima	8	83	91
Indiana	1	18	19
Central Ohio	35	52	87
Kentucky	19	206	225
Tennessee	6	23	29
Mississippi	5	20	25
Alabama	1	9	10
Georgia	1	4	5
Illinois	4	34	38
Kansas	106	428	534
Oklahoma	266	1,165	1,431
North Texas	56	403	459
East Central Texas	15	61	76
North Louisiana-Ark.	144	455	599
Gulf Coast	75	156	231
Southwest Texas	48	62	110
Wyoming	71	255	326
Montana	32	126	158
Colorado	14	85	99
Utah	1	27	28
New Mexico	5	51	56
Total April	1,070	4.188	5.258
Total March	990	3.982	4.972
Difference	80	206	286

The Smackover Field in Arkansas accounted for more than half the initial production of all wells completed in the United States east of California during April, that field having a flush output of 264,507 bbls. while the total for all fields east of California was 479,681 bbls. What the development following the discovery of the deeper sand at Smackover meant in the way of new production is shown by the fact the initial output jumped from 13,071 bbls. for March to 264,507 bbls. for April. Kansas showed a revival of activity during April, there being 259 wells completed in that month as compared to 107 in March. East Central Texas showed a slump, with initial production of 4,529 bbls. last month as against 17,309 bbls. in March.

OKLAHOMA FIELDS

Summary of Wells Completed

County—	Comp.	Prod.	Dry	Gas
Tulsa	34	1,638	10	6
Osage	79	12.143	10	6
Okmulgee	47	2.214	17	6
Seminole	43	33.821	4	0
Okfuskee	19	4,855	1	4
Hughes & McIntosh	21	6,029	6	0
Muskogee and Wagoner	22	139	10	4
Creek	51	4,222	17	4
Pawnee	13	1,442	4	0
Payne and Lincoln	3	525	0	0
Kay	23	15.618	4	2
Garfield and Noble	10	4,654	2	0
Carter	22	1,670	3	2
Stephens and Cotton	21	426	7	3
Miscellaneous	40	459	18	5
Total April	447	89.855	113	42
Total March	423	73.587	131	50
Difference	24	16,268	18	8

Summary of Rigs and Wells Drilling

County—	Rigs	Drg.	Ttl.
Osage	28	119	147
Tulsa	14	13	45
Okmulgee	30	62	92
Seminole	27	134	161
Okfuskee	21	84	105
Hughes and McIntosh	18	83	101
Muskogee and Wagoner	4	25	29
Creek	34	118	152
Pawnee	5	80	85
Kay	14	75	89
Payne and Lincoln	9	68	77
Noble	3	30	33
Garfield	25	29	54
Stephens and Cotton	5	49	54
Pontotoc	0	18	18
Carter	10	57	67
Miscellaneous	19	103	122
Total April	266	1.165	1.431
Total March	258	1,151	1,409
Difference	8	14	22

KANSAS FIELDS

Summary of Wells Completed

County—	Comp.	Prod.	Dry	Gas
Allen	8	50	2	4
Anderson	43	2,158	2	1
Butler	4	65	3	0
Chautauqua and Elk	33	1.010	16	6
Cowley	27	3.251	10	1
Greenwood	83	10,213	17	0
Montgomery	28	1,200	14	3
Russell	4	750	1	0
Miscellaneous	29	163	19	3
Total April	259	18.860	84	18
Total March	107	11.094	39	3
Difference	152	7,766	45	15

Summary of Rigs and Wells Drilling

County—	Rigs	Drg.	Ttl.
Butler	6	30	36
Chautauqua and Elk	7	24	31
Cowley	17	106	123
Greenwood	56	89	145
Lyon	1	6	7
Montgomery	0	28	28
Russell	8	14	22
Sedgwick	1	8	9
Sumner	0	20	20
Wilson	0	9	9
Woodson	0	8	8
Miscellaneous	10	86	96
Total April	106	428	534
Total March	116	437	553
Difference	10	9	19

EAST CENTRAL TEXAS

County—	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Limestone-Freestone	23	4,115	4	3	5	13	18
Navarro	23	414	7	2	4	20	24
Miscellaneous	11		11	0	6	28	34
Total Apr.	57	4,529	22	5	15	61	76
Total Mar.	104	17,309	26	2	18	76	94
Difference	47	2.780	4	3	3	15	18

NORTH CENTRAL TEXAS

Summary of Wells Completed

District—	Comp.	Prod.	Dry	Gas
Wichita County	49	1,518	15	0
Archer	139	7,742	49	0
Young	69	9,453	26	0
Stephens	19	803	4	3
Eastland	10	119	6	1
Wilbarger	36	3,087	9	1
Reagan	6	4,950	3	1
Brown	5	520	1	0
Wildcats	43	3,080	24	3
Total April	381	31.272	137	9
Total March	291	22.229	114	8
Difference	90	9.043	23	1

Summary of Rigs and Wells Drilling

District—	Rigs	Drg.	Ttl.
Wichita County	2	36	38
Archer	9	77	86
Young	7	35	42
Stephens	7	32	39
Eastland	5	31	36
Wilbarger	9	79	88
Reagan	1	15	16
Brown	1	3	4
Wildcats	15	95	110
Total April	56	403	459
Total March	75	328	403
Difference	19	75	56

NORTH LOUISIANA AND ARKANSAS

Summary of Field Operations

Dist.—	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Union Co.	88	234,490	5	3	66	201	267
Ouachita Co.	59	25,665	9	2	35	103	138
Nevada	2	190	0	0	2	6	8
Stephens	5	0	1	0	1	3	4
Bellevue	6	47	1	1	1	2	3
Caddo	7	415	1	2	4	21	25
Cott'n Valley	21	3,700	0	0	18	29	47
La. wildcats	18	0	9	9	13	49	62
Ark. wildcats	12	0	12	0	4	42	46
Total Apr.	214	264.507	38	17	144	455	599
Total Mar.	117	13,071	26	16	106	386	492
Difference	97	251 436	12	1	38	69	107

GULF COAST

Summary of Field Operations

Dist.—	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Batson	7	105	2	0	0	4	4
Blue Ridge	2	2,400	0	0	2	1	3
Big Creek	4	0	4	0	0	7	7
Barber Hill	0	0	0	0	0	1	1
Damon Mound	1	15	0	0	0	1	1
Edgerly (La.)	2	600	1	0	0	2	2
Goose Creek	8	865	3	0	2	9	11
Humble	3	335	1	0	1	5	6
Hull	15	14,060	1	0	3	21	24
Jennings (La.)	0	0	0	0	0	3	3
Markham	1	0	1	0	2	2	4
Orange	17	4,052	3	0	3	10	13
Pierce Jct.	1	0	1	0	0	3	3
Spindletop	6	345	1	0	0	1	1
Saratoga	4	67	0	0	2	5	7
Sour Lake	6	149	3	0	2	4	6
South Liberty	27	21,275	6	0	21	43	64
Vinton (La.)	4	110	2	0	1	11	12
W. Columbia	5	135	3	0	1	2	3
Lockport (La.)	0	0	0	0	0	4	4
Miscellaneous	8	0	8	0	35	18	53
Total Apr.	121	44.513	39	0	75	156	231
Total Mar.	120	67.503	30	0	58	157	215
Difference	10	22,990	9	0	17	1	16

Southwest Fields—							
Luling	3	700	1	0	4	2	6
Laredo district	8	455	0	3	7	3	10
Somerset	0	0	0	0	3	1	4
Calliham	2	0	0	2	2	1	3
Rockdale-Minerva	0	0	0	0	3	2	5
Jim Hogg County	7	1,200	0	1	10	4	14
Lockhart	11	8,670	2	0	9	9	18
Miscellaneous	0	0	0	0	10	40	50
Total Apr.	31	11,025	3	6	48	62	110
Total Mar.	29	4.590	2	4	26	75	100
Difference	2	6,435	1	2	23	13	10
Grand total April	152	55,538	42	6	123	218	341
Grand total March	149	72.093	31	4	83	232	315
Difference	3	16.555	11	1	40	14	26

ROCKY MOUNTAIN FIELD

Summary of Field Operations

Field—	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Big Muddy	0	0	0	0	0	3	3
Salt Creek	36	4,932	0	0	50	63	113
Lance Creek	0	0	0	0	0	3	3
Big Horn Basin	1	0	1	0	7	44	51
Lost Soldier	3	1,533	0	0	2	31	33
Rock River	1	0	1	0	1	17	18
Fremont Co.	1	0	1	0	0	26	26
Osage	0	0	0	0	6	10	16
Natrona Co.	0	0	0	0	0	17	17
Lincoln and Uintah Co.s	0	0	0	0	3	10	13
Baxter Basin	0	0	0	0	1	8	9
Miscellaneous	0	0	0	0	1	23	24
Total April	42	6.465	2	0	71	255	326
Total March	21	2,651	3	5	74	269	343
Difference	21	3.814	0	5	3	14	17

MONTANA

Sunburst	12	945	1	0	13	33	46
Miscellaneous & Cat Creek	6	100	1	0	19	93	112
Total April	18	1,045	2	0	32	126	158
Total March	11	160	8	0	17	114	131
Difference	7	885	6	0	15	12	27

COLORADO

Total April	5	0	5	0	14	85	99
Total March	3	1.000	1	1	11	73	84
Difference	2	1.000	4	1	3	12	15

UTAH

Total April	0	0	0	0	1	27	28
Total March	0	0	0	0	1	23	24
Difference	0	0	0	0	0	4	4

NEW MEXICO

Total April	9	2,130	0	0	5	51	56
Total March	6	1,085	1	0	3	46	49
Difference	3	1.045	1	0	2	5	7

CENTRAL OHIO

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Licking	0	0	0	0	0	1	1
Ashland	1	0	0	1	6	3	9
Medina	2	3	0	0	2	5	7
Lorain	4	0	0	4	0	2	2
Wayne	3	0	1	2	2	9	11
Richland	0	0	0	0	0	1	1
Vinton	0	0	0	0	0	1	1
Holmes	9	148	3	2	14	23	37
Jackson	0	0	0	0	5	1	6
Athens	8	6	3	3	6	4	10
Meigs	1	14	0	0	0	0	0
Lawrence	0	0	0	0	0	1	1
Huron	0	0	0	0	0	1	1
Corhocton	2	0	0	2	0	0	0
Total April	30	171	7	14	35	52	87
Total March	27	115	7	15	30	47	77
Difference	3	56	0	1	5	5	10

LIMA FIELD

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Wood	9	86	3	0	0	18	18
Hancock	5	110	0	0	1	8	9
Allen	3	75	0	0	2	5	7
Auglaize	8	163	3	0	0	10	10
Sandusky	5	63	0	0	0	5	5
Mercer	13	134	1	1	0	12	12
Van Wert	1	20	0	0	0	4	4
Seneca	1	0	1	0	1	1	2
Lucas	1	18	0	0	0	3	3
Ottawa	2	20	0	0	0	1	1
Darke	2	0	2	0	0	1	1
Shelby	5	72	1	0	0	5	5
Hardin	4	47	0	1	0	3	3
Wyandot	0	0	0	0	0	1	1
Paulding	0	0	0	0	3	2	5
Defiance	0	0	0	0	0	1	1
Crawford	0	0	0	0	0	2	2
Michigan	0	0	0	0	0	2	2
Total April	59	808	11	2	8	83	91
Total March	37	395	8	2	9	55	64
Difference	22	413	3	0	1	28	27

ILLINOIS

Summary of Field Operations

	Comp.	Prod.	Dry	Rigs	Drg.	Ttl.
Clark	4	82	0	0	13	13
Crawford	1	0	1	1	4	5
Lawrence	2	10	1	0	2	2
Wabash	6	80	4	1	5	6
Douglas	0	0	0	0	1	1
Union	0	0	0	0	1	1
Jasper	0	0	0	0	1	1
Coles	1	0	1	0	1	1
Edwards	0	0	0	1	0	1
McDonough	0	0	0	0	1	1
Fayette	0	0	0	1	0	1
Washington	2	0	2	0	0	0
Jackson	0	0	0	0	1	1
Total April	16	172	9	4	34	38
Total March	16	572	4	5	30	35
Difference	0	400	5	1	4	3

INDIANA

Summary of Field Operations

	Comp.	Prod.	Dry	Rigs	Drg.	Ttl.
Jay	0	0	0	0	3	3
Adams	0	0	0	0	1	1
Delaware	0	0	0	0	3	3
Randolph	0	0	0	1	0	1
Gibson	1	15	0	0	1	1
Pike	4	74	0	0	5	5
Sullivan	0	0	0	0	1	1
Hendricks	0	0	0	0	1	1
Jackson	0	0	0	0	1	1
Shelby	0	0	0	0	1	1
Knox	1	0	1	0	0	0
Allen	0	0	0	0	1	1
Spencer	0	0	0	0	1	1
Lagrange	0	0	0	0	1	1
Total April	6	89	1	1	18	19
Total March	6	125	2	1	14	15
Difference	0	36	1	0	4	4

One gas well was completed in Sullivan County in March.

KENTUCKY-TENNESSEE

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Warren	23	517	2	0	0	24	24
Allen	25	174	10	0	2	22	24
Barren	36	252	9	1	5	32	37
Owensboro	12	67	6	0	0	16	16
Cumberland-Monroe	9	539	0	1	0	14	14
Russell	1	0	1	0	0	2	2
Logan	0	0	0	0	0	2	2
Simpson	1	10	0	0	1	1	2
Metcalf	0	0	0	0	0	5	5
Edmonson	0	0	0	0	0	1	1
Wayne	17	249	5	0	0	19	19
Wolfe	3	44	0	0	0	3	3
Estill	2	6	0	0	0	3	3
Jackson	1	0	0	1	0	1	1
Clay	0	0	0	0	0	1	1
Lee-Owsley	12	60	8	1	2	7	9
Lawrence-Johnson	12	479	0	0	3	21	24
Johnson-Magoffin	10	85	0	1	5	9	14
Floyd	5	0	1	4	0	13	13
Elliott	2	4	1	0	0	1	1
Rowan	2	0	0	2	0	0	0
Madison	0	0	0	0	0	1	1
Flemming	1	5	0	0	0	1	1
Greenup	0	0	0	0	1	3	4
Martin	0	0	0	0	0	2	2
Knox	0	0	0	0	0	1	1
Morgan	1	20	0	0	0	3	3
Bell	1	0	1	0	0	0	0
Boyd	0	0	0	0	0	1	1
Laurel	1	0	1	0	0	0	0
Harlan	1	0	1	0	0	0	0
Kentucky	178	2,511	46	11	19	206	225
Tennessee	2	125	0	0	6	23	29
Mississippi	7	0	7	0	5	20	25
Alabama	0	0	0	0	1	9	10
Georgia	0	0	0	0	1	4	5
Total April	187	2,636	53	11	32	262	294
Total March	95	667	28	7	29	206	235
Difference	92	1.969	25	4	3	24	31

EASTERN FIELDS

Summary of Field Operations

Field—	Comp.	Prod.	Dry	Gas
Allegany	27	47	0	0
Bradford	94	220	1	0
Middle Field	4	5	0	0
Venango-Clarion	37	61	3	0
Butler-Armstrong	16	37	2	0
Southwest Pennsylvania	17	37	2	1
West Virginia	98	217	16	14
Southeast Ohio	79	997	16	9
Total April	374	1.604	41	79
Total March	275	1.059	35	71
Difference	99	545	6	8

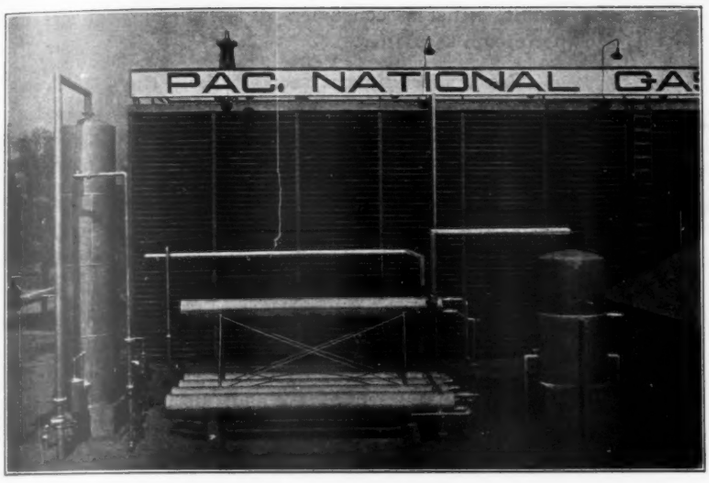
Rigs and Wells Drilling

Fields—	Rigs	Drg.	Ttl.
Allegany	9	21	30
Bradford	29	103	132
Middle Field	0	7	7
Venango-Clarion	10	23	33
Butler Armstrong	8	28	36
Southwest Pennsylvania	60	166	226
West Virginia	41	94	135
Southeast Ohio	157	465	622
Total April 30	154	415	569
Total March 31	3	50	53
Difference			

A. P. I. MOVES

NEW YORK, May 4.—Headquarters of the American Petroleum Institute have been moved from 15 West Forty-fourth Street to the Postum Building, 250 Park Avenue. The change in headquarters was made to obtain facilities for meetings of the directors and committees, according to R. L. Welch, secretary.

NEWTON EQUIPMENT



Has PROVED Its Efficiency and Economy

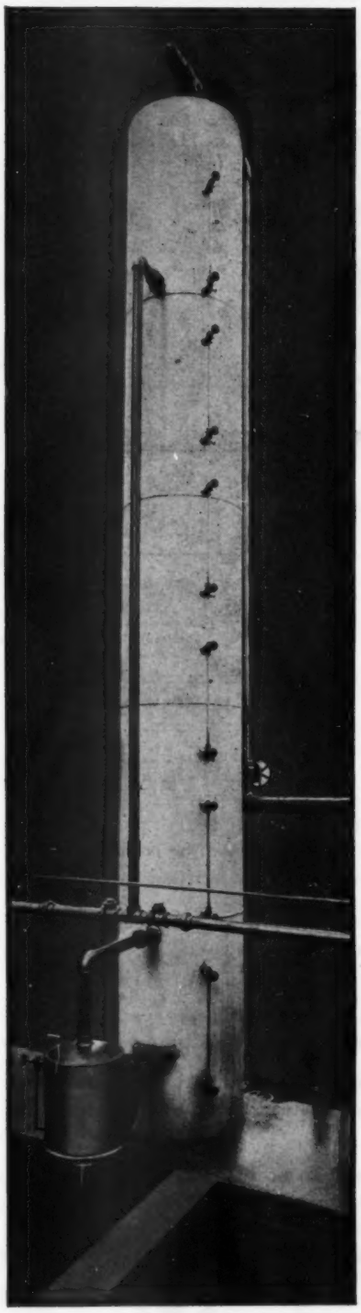
We have the actual figures, taken from the books of the companies who are using NEWTON EQUIPMENT, to substantiate every claim we make for our Absorption Plants, complete or any detail. *We will be glad to furnish these figures upon request.*

NEWTON FEATURES

1. We manufacture and design plants in any capacity to meet your particular requirements, and the plant is sold *without royalty.*
2. Your investment is about one-half the amount required for the ordinary plant and can be erected in about one-half the time necessary for most plants.
3. Operating expense is less. Plants in California are operated by the pumpers who receive a slight increase in salary to keep water in the boilers and pumps lubricated.
4. Newton Equipment is GUARANTEED to extract 100% of a charcoal test.
5. The salvage value is almost 100%. The entire plant, with the exception of the concrete work, can be moved quickly at nominal cost.
6. The operating pressure can be anything from 3 pounds upward. This allows a slight well pressure to operate the plant without installing compressors. Plant will return its investment before machinery is necessary.

WRITE OUR REPRESENTATIVES

Refiners Construction Co.	Hurley Bros.	Tom McGuire
Transportation Bldg.	Kennedy Bldg.	1st Nat'l Bank Bldg.
Los Angeles	Tulsa, Okla.	Denver, Colo.



View of a 30"x20' Absorber, operating at 30 lbs. pressure, at the plant of the Waite Phillips Co., Beggs, Okla., extracting 6,500 gallons gasoline a day: PRICE - - $1,071.00

NEWTON PROCESS MANUFACTURING COMPANY, Fullerton, Calif.

104

NEWTON PROCESS MANUFACTURING COMPANY

The OIL and GAS JOURNAL

PRODUCING REFINING MARKETING

Published Weekly by
THE PETROLEUM PUBLISHING COMPANY
114-116 West Second Street
TULSA, OKLA.

Established as an International Publication in 1910 by Patrick C. Boyle

President - - - - - - - - - - - - Frank T. Lauinger
Vice President and General Manager - - Robert W. Egan
Treasurer - - - - - - - - - - - - - H. J. Bryan
Secretary - - - - - - - - - - - - - W. T. Bryan
Editor - - - - - - - - - - - - - - James McIntyre
News Editor - - - - - - - - - - Andrew M. Rowley
Associate Editor - - - - - - - - - W. T. Anderson
Refinery Editor - - - - - - - - - - C. O. Willson
Advertising Manager - - - - - - - - Clarence Morris
Circulation Manager - - - - - - - - J. P. Mulkern

DISTRICT ADVERTISING OFFICES
30 Church Street, NEW YORK — 1328 Peoples Gas Bldg., CHICAGO, ILL.
PITTSBURGH, PA., 1003 Jones-Law Bldg.

TERMS OF SUBSCRIPTION
(By Mail, Postage Prepaid)

Single copies - - - - - - - $ .15 — One year (in United States) - - $6.00
Three months - - - - - - - $2.00 — One year (in Canada) - - - - $7.00
Six Months - - - - - - - - $3.00 — One year (foreign countries) - - $7.00

ADVERTISING RATES ON APPLICATION
Telephones: 6291-6292-6293
Remittances by Checks, Drafts, Express or Postal Money Orders should be made payable to
The Petroleum Publishing Company
Cable address, "Oilgasnal"

MEMBER AUDIT BUREAU OF CIRCULATIONS

THE LIGHT OIL DECLINE

At the close of the fourth month of 1925 and the opening of the season of maximum gasoline consumption the oil industry seems to have a better grip on itself than in either of the preceding years.

This, too, despite an unexpected increase in production of crude which has carried the total 119,132 barrels a day above the peak of 1924.

Despite, also, a winter overproduction of gasoline and a resultant check to too rapidly advanced prices.

The explanation is that there has been an analysis of statistics of the trade instead of superficial acceptance of totals as in former years.

Oil used to be just oil, in production totals, but the introduction of the gravity basis of purchase, which should have led to analysis sooner, is only coming to be generally considered in appraising output from the fields.

It is recognized today as never before that the significance of production lies in the proportions of heavy and light oils.

The industry is learning to apply the same standard of measurement to production totals as is expressed in the purchasing basis. Oil is not just oil but is what can be made out of it.

So a flood of nearly 300,000 barrels a day from the deep sand at Smackover has not stampeded the industry as it might have done in a less informed and less reasoning day.

Oil men stop to say: "Yes, it's a whale of a field, but it is not going to affect the gasoline output much."

And it is the gasoline output, the production of crude good for gasoline that really affects the industry, that spells good times or poor times for the oil man.

So, instead of having their eyes bulge over Smackover's production they concentrate their gaze on the output from the light oil fields, the fields that produce the precious high gasoline content crude which is the actual maker of the market.

It has been one thing, of course, for the men in the industry to understand this and quite another to have it understood by the public, either as consumers of petroleum products or investors in petroleum securities.

For a short time it seemed likely the public was running off with the idea that the increase in production meant a repetition of the overproduction of 1923 and 1924 with consequent "distress" gasoline forcing sales at a sacrifice and demoralizing the entire industry.

The Oil and Gas Journal was prompt to call attention to the significant difference between the production curves of light and heavy oil.

While production as a whole was mounting rapidly, threatening to and later exceeding the peak of last year by 100,000 barrels daily, the production of light gravity oil for the week ending May 2 averaged 115,322 barrels a day less than it did in the week ending January 17 last.

This showed very strikingly the trend in the production of crude specially valued for its gasoline content. The oil of the gravities which form the basis for the chief operation of the industry, supplying the motor fuel of the nation, is declining in output.

In the light of that fact the psychological effect of the increasing total production of all gravities was quickly dispelled.

There was less talk of reductions in crude and the slipping tank wagon market displayed encouraging resistance to downward influences.

Smackover, itself, was considered a temporary phase and it was felt that with the period of maximum consumption of gasoline at hand, if the industry kept its head, we might yet realize the earlier expectations of a good year for the industry.

That is the situation as it stands today. There should be no rocking of the boat. We have passed through two summers of gasoline consumption at unprofitable prices. Whether we are to suffer another depends upon the good sense of the industry now.

There is nothing in the crude position to justify pessimism. The light oil situation is wholly encouraging so far as sustaining prices is concerned. In fact, there are thoughtful students of production who are puzzled to figure where the high gasoline crude is to come from next fall and winter.

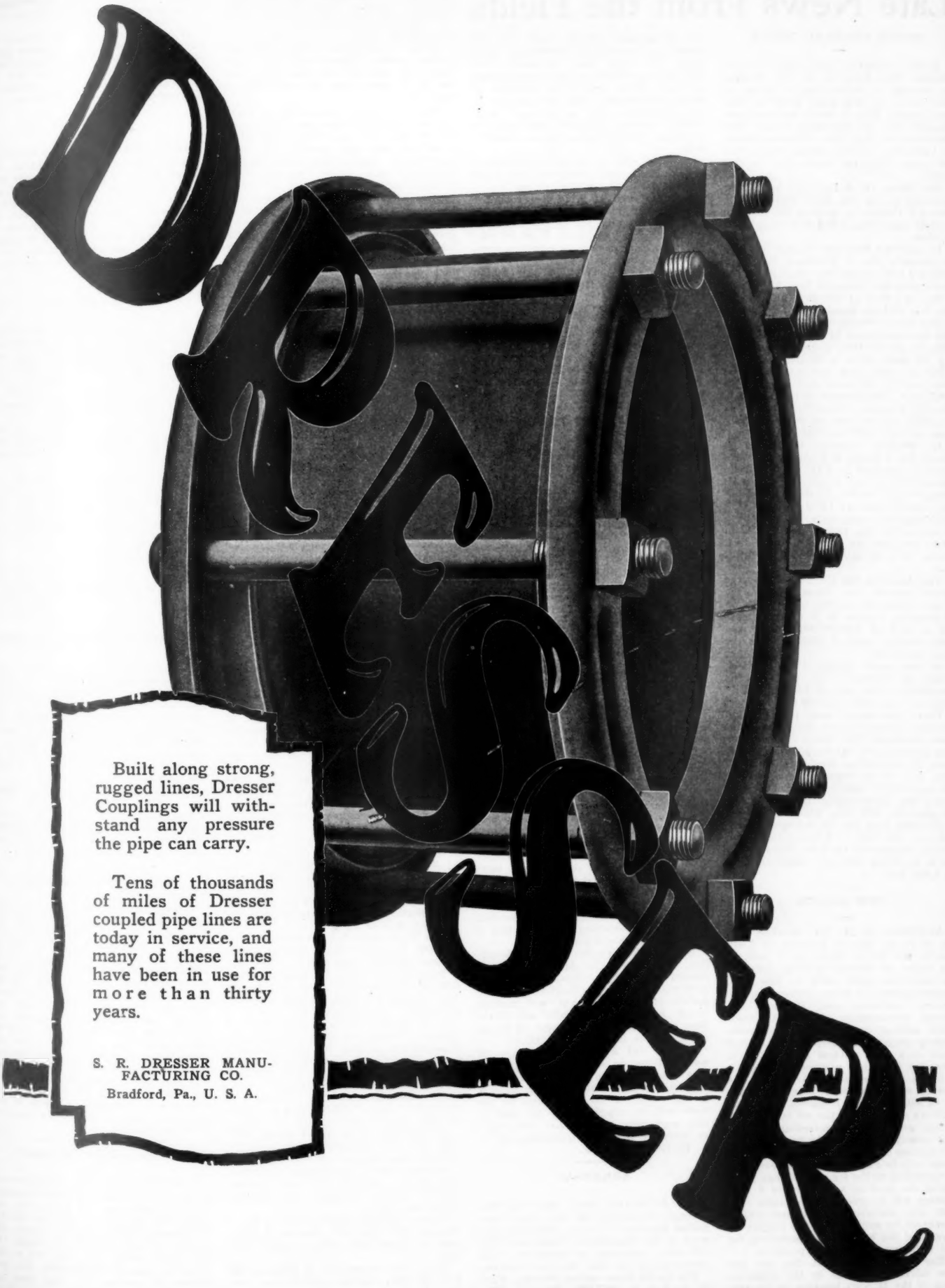
It is true that gasoline can be obtained from some of the heavier gravities but only by much more expensive processes than the bulk of the gasoline produced today. That necessity will not make for lower prices.

The fact is that the industry has been selling gasoline below what it should have obtained for it. Those days, if the trend in light oil production continues, are passing.

There is, of course, no imminent danger of gasoline shortage. Plenty of it for all prospective needs can be produced at a price that will justify production. That price should mean better returns to the industry than it has been getting. In fact, it will have to, if the industry is to continue to function.

Viewed from any angle the oil situation is better than it has been for several years. The most hopeful feature is that the industry itself is getting to understand its own problems better, to analyze its statistics and make practical application of them.

The comparative steadiness with which it has met and is meeting the psychological effect of increased total production with calm scrutiny of the facts shows how much self-control it has gained. That steadiness, continued, is likely to save the industry from a repetition of 1923 and 1924 this season.



Built along strong, rugged lines, Dresser Couplings will withstand any pressure the pipe can carry.

Tens of thousands of miles of Dresser coupled pipe lines are today in service, and many of these lines have been in use for more than thirty years.

S. R. DRESSER MANUFACTURING CO.
Bradford, Pa., U. S. A.

Late News From the Fields

NORTH CENTRAL TEXAS

FORT WORTH, Tex., May 5.—The Humble Pipe Line Co. is now running an average of 18,000 bbls. of crude oil daily from the Big Lake Field in Reagan County. This is about the maximum capacity of the Humble's 8-inch pipe line from the Big Lake Field to Comyn, in Comanche County, where connections are made with the trunk line to tide water.

The Texon Oil & Land Co. has a new producer in the Big Lake Field, No. 8, Group 1 University, making 125 bbls. an hour in sand from 2,914-40 feet and still drilling.

In southern Stephens County, Barkley & George's No. 1 Pritchard has been drilled 4 feet deeper into the pay and the production has increased from 1,700 bbls. a day to a flow of 150 bbls. an hour on the first 10-hour gauge.

The Texas Pacific Coal & Oil Co. has two new producers in Stephens County, Nos. 51 and 52 Binney, the former making 75 bbls. after a 40-quart shot at 1,885 to 1,904 feet and the latter 30 bbls. after a 20-quart shot at 1,665 to 1,677 feet. The Strawn Petroleum Co.'s No. 22 Stuart, in Stephens County, is swabbing at the rate of 80 bbls. daily from sand at 1,667 to 1,783 feet.

In Wichita County, O'Donohoe & Gates' No. 1 Kemp & Kempner is a producer in the sand at 1,413 to 1,420 feet. On a 10-hour test it swabbed 256 bbls. Grayce Oil Co.'s No. 11 Daniels is a 15-bbl. well in sand at 1,310 to 1,325 feet, and Magnolia company's No. 1 Weeth is making 25 bbls. from sand at 1,643 to 1,648 feet and its No. 110 Reilly is a 12-bbl. well in sand at 1,605 to 1,612 feet.

The Amarillo Oil Co. has one of the largest gassers ever brought in in the Texas Panhandle in No. 2-B Bivins, in Hutchinson County. It is reported making a total of 162,000,000 feet of gas daily from a depth of 2,925 feet, in the lime formation.

In the south Archer County Field, Fisher & Gilliland's No. 4 Rogers, is swabbing at the rate of 400 bbls. daily from sand at 1,337 to 1,350 feet.

There are several new producers in northern Young County which have not been completed. The Texas Co. has four new producers on the Gambrell lease, all from the regulation depth around 1,200 feet. No. 19 is reported swabbing at the rate of 230 bbls.; No. 21 flowing 80 bbls.; No. 23 pumping 190 bbls.; No. 24 pumping 165 bbls. The Humble Oil & Refining Co.'s No. 12 Schlegel is estimated at 100 bbls. at 1,174 to 1,192 feet, and the Simms Oil Co.'s No. 6-B Carpenter is swabbing 200 bbls. daily at 1,010 to 1,026 feet.

NEW MEXICO

ARTESIA, N. M., May 4.—The finding of an oil sand at a depth of 1,640 feet in the W. C. Wells No. 1 well, in the center of Section 19-20-30, featured an otherwise quiet week in this field. Approximately 18 miles southeast of the present producing area, the well has caused considerable excitement, much State acreage and several Government drilling permits changing hands. Looked upon as a rank wildcat the Wells test attracted but little attetion although it is in the southeast trend. Acreage in the locality of the well went begging at from $5 to $20, and now is quoted at around $100 an acre. While the oil is of a different grade, being exceedingly heavy and testing at around 16 gravity, it is the opinion of local oil men that a higher grade will be found at a lower level.

According to the log, the bit has penetrated the sand at a distance of 6 feet. Storage will be erected immediately. The well will probably be deepened unless purchased by one of the large companies, several of the latter now negotiating for the well and surrounding property.

The finding of the oil this test has also advanced acreage in the neighborhood of the McNutt location, in the center of Section 4-21-30, which will be drilled by Snowden & McSweeney to a depth of 3,000 feet. Regardless of whether the Wells makes a commercial producer it has proved the presence of oil in southeastern New Mexico and in all probability will be followed by a wildcat drilling campaign that will extend into the Big Lake, Reagan County, field.

Another well to attract attention is the A. R. Goodale California No. 1, in Section 30-18-29, having picked up a strong gas sand at 2,174 feet good for 200,000 feet. This test is 5 miles east of the proven area and gives every indication of being a producer. Work of completion is being delayed by a broken stem.

Several other wells nearing the sand have also been delayed by bad fishing jobs, including the Roswell No. 2 of the New States Oil Co., the No. 1 of the Seven Rivers Oil Co., and one of the Illinois wells.

The Gilliland Oil Co., of Tulsa, has completed its first producer in the local field, in the NE NE Section 29-18-28. This well has been shot three times and is estimated will be good for 100 bbls. on the pump.

SOUTHWEST TEXAS

SAN ANTONIO, Tex., May 5.—The Grayburg Oil Co., of this city, has bought the 60-acre F. A. Gomillion lease of the United North & South Oil Co., at Lockhart, on which they recently brought in a big well in the Serpentine, below the Austin chalk, at 1,737 feet, and has taken charge and will develop the lease. The Humble company completed No. 2 Brewer at Lockhart at 1,434 feet, making 400 bbls. and is drilling in No. 4. Witherspoon completed No. 3 Brewer for 400 bbls. Roxana Corp. is preparing to drill on the Hermann Schmidt 100-acre farm, 2 miles southwest of Kingsbury, in Guadalupe County, where it is believed is another Serpentine bed.

The Humble company is erecting a steel derrick on the Cassin land, between Somerset and Alta Vista Fields, in Bexar County, for a first test on a block of 25,000 or more acres under lease.

The Block 13 well of the Big Bend Company, which extends the Jim Hogg Pool 1 mile, is making 800 bbls. through 1-inch choker.

Mid-Kansas Oil & Gas Co. seems to have a dry hole in No. 3 Brewer, in the Lockhart Field, which at 1,700 feet was dry. Operators are cautious, however, since the North & South made a producer out of its dry hole, No. 1 F. A. Gomillion. No. 3 Brewer is in the center of the field and surrounded by production. The Serpentine in places is, however, very porous and productive and in others very tight and compact so that production is impossible. There is talk of shooting some wells. Mid-Kansas was contemplating shooting its No. 3 and it may be made into a producer.

North & South's No. 1 F. A. Gomillion, which came in April 24 making around 1,000 bbls. flowing a steady stream stopped flowing steadily about the middle of last week and was making hourly heads. The company was swabbing and working in the hope of bringing it back to initial production.

Humble Oil & Refining Co. has 16 wells drilling on its M. L. Brewer 64-acre tract and two locations to which rigs will be moved at once. The lease is in the center of the field. Most of the tests will be completed by the end of this week. Sun Oil Co. has practically as extensive a drilling campaign on its A. H. Gomillion lease.

ARKANSAS

EL DORADO, Ark., May 4.—The average production for the seven days ending Sunday at 7 a. m. from the deep sand in the Smackover Field was 264,136 bbls., according to estimates. The estimates by the day were as follows:

For the 24 hours ending Monday, April 27, at 7 a. m., 237,650; Tuesday, 229,570 bbls.; Wednesday, 268,435 bbls.; Thursday, 250,930 bbls.; Friday, 275,725 bbls.; Saturday, 299,120 bbls.; Sunday, 287,521 bbls.

Sunday's production came from 109 flowing wells. There were 130 completed oil wells in the deep sand area but 21 of them were not producing on that day.

There is a lively demand for the heavy oil at a premium over the posted price of 40 cents, but some producers refuse to sell at any price now offered. Outside buyers representing sugar refining interests and other manufacturers anxious to buy fuel oil for 50 or 60 cents a barrel less than it is worth, are besieging producers to sell and while hotel lobby rumors tell of big sales, investigation shows that most of the rumors are without truth. The Magnolia Petroleum Co. is in the market for as high as 20,000 bbls. a day of heavy Smackover crude if it can buy it at the posted price.

A total of 6,000,000 bbls. of earthen storage is being constructed in various parts of the field by operators and purchasing companies.

The latest completions reported are as follows: Mazda Oil Corp.'s No. 2-B Lawton, in Section 10-16-15 reported to be good for 10,000 bbls. of fluid 70 per cent water and sediment.

Unity Petroleum Co.'s No. 8 Roper, NE cor. SW, Section 3-16-15, flowing by heads 1,000 bbls. from sand at 2,370-78 feet.

George & Jones' No. 2 Umsted, NW cor. E half, Lot 1 NW quarter of Section 4-16-15 was drilled to a total depth of 2,390 feet; plugged back and tubed with 3-inch tubing; flowing 1,000 bbls. from sand at 2,379-87 feet.

Natural Gas & Petroleum Co.'s No. D-3 Murphy, NW cor. SW Section 8-16-15, blew in as a 40,000,000-foot gas well, spraying salt water. It had been drilled to 2,556 feet. It is not known where the gas is coming from. The big gas sand lies at about 2,100 feet, and was cased off.

Shipping 125,000 Bbls.

Monday's production of Smackover heavy crude was 335,000 bbls. of which 277,000 bbls. came from 115 flowing wells in the deep sand. Added to this is 30,500 bbls. of Smackover light oil, making a total production from the field of 365,500 bbls. on that day. On Saturday the total quantity of crude in the whole Smackover Field removed from leases was 388,000 bbls., of which 125,000 bbls. was shipped out in tank car and pipe lines and the remainder placed in earthen storage by the purchasing companies.

Monday's completions included the following wells:

Sinclair Oil & Gas Co.'s No. 1 Berry, NW NE NW, Section 33-15-15, sand at 2,285 to 2,301 feet, 25,000,000 feet of dry gas with 475 pounds rock pressure.

Standard Oil Co.'s No. 7 Umsted, NE NW, Section 32-15-15, sand at 2,390-2,400 feet, flowing 1,000 bbls.

The Texas Co.'s No. 4 Calloway, NW NE SE, Section 4-16-15, sand at 2,343-51 feet, flowing 2,500 bbls.

Sure Oil Co.'s No. 4 Flenniken, CSL SW, Section 5-16-15, sand at 2,389-92 feet, flowing 600 bbls., 85 per cent salt water.

Gulf Refining Co.'s No. 15 Hardy-Murphy, SE cor. Section 5-16-15, sand at 2,353-66 feet, flowing 700 bbls. by heads.

Sun Oil Co.'s No. 5 Hatfield, CEL SE SE, Section 6-16-15, sand at 2,372-82 feet, flowing 350 bbls. by heads.

Gulf Refining Co.'s No. 1 Berry, NE SE NW, Section 7-16-15, sand at 2,406-17 feet, tested 2,000 feet of salt water.

Gulf Refiing Co.'s No. 7 Berry, SW NW NE NW, Section 8-16-15, sand at 2,361-71 feet, flowing 200 bbls. by heads.

Natural Gas & Petroleum Co.'s No. F-3 Murphy, SE SW NE SW, Section 9-16-15, sand at 2,464-78 feet, flowing 1,500 bbls.

Natural Gas & Petroleum Co.'s No. 3 Bilyew, SW NW NW, Section 9-16-15, sand at 2,398-2,421 feet, flowing 2,500 bbls.

Eason and others No. 3 Palmer, SE SW SE SW, Section 2,483-94 feet, 400 bbls. by heads.

Twenty-nine new locations were made in the past week and 56 wells are waiting with cement set.

It is reported here that a refinery in Ponca City, Okla., put a sample batch of heavy Smackover crude through their cracking stills and recovered only 18 per cent gasoline and that a refinery in Baltimore, Md., cracked 20 per cent.

LOUISIANA

SHREVEPORT, La., May 5.—In the Urania district, La Salle Parish, the Zeigen well, which went dead after flowing a few hours, was cleaned out and tubing set with screen. Considerable gas pressure showed up, but when the well came in again it was flowing 75 per cent salt water. It will be plugged back and casing set but if this fails it will be abandoned and a new one started about 600 feet distant.

OKLAHOMA

The Pulaski Oil Co. has a Wilcox sand well in No. 6 Bruner, SW cor SW Section 36-12-13. Top of sand was 2,849 feet, and the well drilled in to 2,865 feet. It made 427 bbls. the first 24 hours. This is an interesting development as there is little good Wilcox production in the vicinity of this lease.

The Gypsy Oil Co.'s No. 1 Proctor, NE cor. SW Section 35-8-8, is still making 30 bbls. per hour at a total depth of 3,280 feet.

W. R. Ramsey's new well, SW cor. SW Section 23-9-9, is flowing by heads. The well heads up every six hours and makes a flow of about 25 bbls. Sand was 3,428 feet cable measurement, first oil found at 3,430 feet, and the total depth is 3,431 feet.

Hiram C. Wilson Oil Co. has a Wilcox well in No. 3, NE cor. NW NW Section 29-19-12. Sand was 2,086-2,136 feet, and the well is good for 25 bbls. on the swab after a shot of 40 quarts.

GASOLINE STOCKS GREATER

WASHINGTON, D. C., May 5.—Gasoline production in March was 853,574,214 gallons, according to the Department of the Interior. Production of gas and fuel oil totaled 1,204,000,000 gallons. Domestic demand for gasoline in March totaled 620,635,551 gallons, a daily average of 20,020,000 gallons, an increase over previous month of 650,000 gallons.

Exorts of gasoline during March amounted to 123,755,783 gallons.

Stocks of gasoline on hand at refineries on April 1, amounted to 1,610,868,168 gallons, increase of 125,000,000 gallons over stocks on hand March 1.

WRONG ILLUSTRATIONS

Wrong illustrations were used in the advertisements of R. D. Nuttall Co., Pittsburgh, Pa., appearing in the issues of The Oil and Gas Journal of April 23 (page 31) and April 30 (page 93) in which The Nuttall Type "Hd" oil well pump gear unit was described. The cut showing the Nuttall oil well pump gear unit with top half of case and driving half of coupling removed was used in the advertisement on April 23 and should have appeared in the advertisement of April 30, while the cut showing the Nuttall oil well pump gear unit completely assembled on bed plate and slide rails ready for attaching motor was used in the issue of April 30 and should have appeared with the advertisement on April 23.

BUYS OFFSET ACREAGE

J. W. McCulloch, who resigned recently as vice president and general manager of the Independent Oil & Gas Co., has purchased the 40-acre tract in the NE SW Section 35-8-8, Hughes County, offsetting the new well of the Gypsy Oil Co., from Jordan and Ash, for a consideration said to be $225,000. Mr. McCulloch is moving four rigs onto the property.

If you want to convert gas oil, fuel oil or topped crude into gasoline, you want the Dubbs Cracking Process. and only the Dubbs

If you want to convert kerosene or gas oil into fuel oil and pay for the privilege of doing it, use the other fellow's process

Universal Oil Products Company
Owners of the Dubbs Process
310 South Michigan Ave
Chicago Illinois

North-Central Texas Field

By George R. Kelley

Reagan, Young and Vernon Counties continue to show gains in production, although new output last week was less than for week before. Two good wells completed in south Archer County. Pritchard well in Stephens County making 1,700 bbls. Two additional wells in Reagan County.

FORT WORTH, Tex., May 4.—Developments in the North Texas oil fields were marked by another increase in average daily production which was brought about mainly by increases from three districts, Reagan County, Young County and the South Vernon Field in Wilbarger County. Some of the other fields, particularly Archer County showed a marked decline in production.

Total average daily output for the week ending April 30 was 157,325 bbls., against a total last week of 155,295 bbls. This leaves a gain for the week of 2,030 bbls. Production in Young County, by far the larger part of which is coming from the shallow sands in the extreme northern part of the county, is now 12,130 bbls. daily against an average last week of 11,155 bbls. Reagan County now has a daily output of 21,285 bbls., not including two large wells that were brought in last week, but which have not yet been put on the completion list nor included in the production column. This county alone shows a gain of more than 2,000 bbls. over last week's figures. Wilbarger County shows a gain this week of about 550 bbls. with production reaching 7,500 bbls. daily.

At present indications point to another increase in production provided wells brought in last week are completed and connected with pipe lines by that time. The Pritchard well of Barkley and others in southern Stephens County which late in the week was making oil at the rate of 1,700 bbls. daily has not yet been included in production figures. There are two new wells in Reagan with a combined flush production of 6,740 bbls. that are not yet included in weekly production figures and there are several new wells in North Young and South Archer that should be included in daily runs this week.

New Production Less

New production last week was nearly 10,000 bbls. less than it was the previous week, the lotal last week being only 7,164 bbls. However, there were no completions last week to compare with the previous week's sensation, the No. 18 of the Big Lake Oil Co. in Reagan County, which made 8,755 bbls. flush.

Completions totaled 97 as compared with 93 for the week before. Of the new wells 56 were oil producers, 39 were dry holes and 2 were gas wells. Archer County led in the number of completions with a total of 35, of which 24 were producers and 11 failures. Young County came second with 23 completions, only 11 of which were producers, 12 being failures. Wichita County recorded eight completions, five producers and three failures; Wilbarger County also had eight with five producers and three failures. Stephens County reported six completions, four producers and two dry holes; Eastland, five completions, three producers, one dry hole and one gas well. Wildcat districts had 12 completions, 4 of which were producers, 7 failures and 1 gasser.

Outside of the Pritchard well of Barkley and associates in Stephens County, there were only two unusual completions in the entire district. These were both in south Archer County. They are the Nos. 3 and 4 of Christie Brothers on the Campbell Bank land. The No. 3 is making 475 bbls. from sand at 1,323 feet, and the No. 4 is making 455 bbls. from sand at 1,302 feet.

A new well in northern Young County which is showing for a good producer gives promise of an eastern extension to the Litchfield shallow pool. It is No. 3 Gambrell of Murchison and others which is reported swabbing at the rate of 150 bbls. daily from sand at 980 to 981 feet. There are two other north Young County wells that are nearing completion. They are the No. 2 Ickert of Clifford Mooers, which is estimated good for 65 bbls. at 1,209-20 feet, and the No. 5 Carpenter of Simms Oil Co., which is swabbing at the rate of 300 bbls. daily from the sand at 1,011-36 feet.

The Texas Co. has a new producer on the Burnett land in Carson County, Texas Panhandle. It is the company's No. 2-B Mary Couts Burnett which is reported flowing at the rate of 550 bbls. from a sandy lime formation encountered at 2,978 feet and drilled to a total depth of 2,984 feet.

Two New Reagan County Wells

There are two new producers in Reagan County. The No. 7 Group 1 University of the Texon Oil & Land Co. is reported flowing at the rate of 210 bbls. an hour from the regulation pay level. Pay was encountered at 2,918 feet and drilled to a total depth of 2,960 feet. The Big Lake Oil Co.'s No. 16 University is flowing at the rate of 1,700 bbls. daily from pay found at 2,976 and drilled to a total depth of 2,990 feet.

In Brown County, northern part, the Prairie Oil & Gas Co.'s No. 9 Newton is a new producer. It is producing from sand at 1,270-87 feet and on a 15-hour gauge made 130 bbls. This well was included in the property recently taken over by the Prairie from the Mahlstedt Mook Oil Co. of Fort Worth.

The Magnolia Petroleum Co. has two new producers in south Archer County that have not been listed as completions. This company's No. 1-B Rogers is producing oil at the rate of 55 bbls. from sand at 1,327-35 feet, and the No. 7 Stampfli is making 155 bbls. at 1,327-47 feet. Gwynn and others' No. 4-A Rogers swabbed 37 bbls. in 12 hours at 1,368-76 feet.

In Wichita County the Dale Oil Corp.'s No. 6 Grace Jennings in the Electra Field is making 75 bbls. from sand at 1,572-88 feet. This is an old well deepened from 1,486 feet where it was making about 20 bbls. The No. 4-B Burnett of the Texahoma and Cullum, also in the Electra district, swabbed 68 bbls. in six hours from the sand at 1,813-22 feet. The No. 1 Pace of Underwood and others, a wildcat reported last week, is still producing about 75 bbls. daily.

The Texas Co.'s No. 41-A Parks in Stephens County is swabbing 100 bbls. of oil and 500 bbls. of water from sand at 2,578-83 feet. In Eastland County the States Oil Corp.'s No. 4 Summerall is a small producer, making 15 bbls. at 2,115-16 feet. It will probably be drilled deeper.

In Throckmorton County, Larkin and others' No. 1 Richards is making 20 bbls. of oil and 75 bbls. of water from three feet of sand topped at 1,841 feet. In Shackelford County Knight and others' No. 1 Moberly, in the new district west of Albany, has been shot into production with 10 quarts of nitro and is making about 25 bbls. at 991 to 1,015 feet. No. 2 Parrish of Phillips Petroleum Co., also in Shackelford County, is a 150-bbl. well at 2,084-86 feet.

PRODUCTION REPORT

Week Ending April 30, 1925

Burkburnett		
Gulf Production Co.	660	
Humble Oil & Refining Co.	405	
Magnolia Petroleum Co.	3,035	
Panhandle Refining Co.	300	
Prairie Oil & Gas Co.	40	
Sinclair Oil & Gas Co.	55	
Sun Oil Co.	160	
Panhandle Refining Co.	60	
The Texas Co.	3,625	
Texhoma Oil & Refining Co.	465	
Miscellaneous	7,895	13,535
Electra		
Empire Gas & Fuel Co.	1,105	
Gulf Production Co.	955	
Humble Oil & Refining Co.	100	
Panhandle Refining Co.	60	
Magnolia Petroleum Co.	3,890	
Panhandle Refining Co.	60	
The Texas Co.	3,625	
Texhoma Oil & Refining Co.	1,715	
Miscellaneous	5,870	17,320
Iowa Park		
Gulf Production Co.	45	
Humble Oil & Refining Co.	10	
Magnolia Petroleum Co.	575	
Panhandle Refining Co.	45	
Texhoma Oil & Refining Co.	55	
Miscellaneous	3,480	4,210
Archer County		
Empire Gas & Fuel Co.	570	
Gulf Production Co.	3,420	
Humble Oil & Refining Co.	890	
Magnolia Petroleum Co.	720	
Panhandle Refining Co.	300	
Prairie Oil & Gas Co.	1,040	
Sun Oil Co.	260	
The Texas Co.	2,260	
Texhoma Oil & Refining Co.	2,410	
Miscellaneous	27,105	38,975
Petrolia		
Gulf Production Co.	180	
The Texas Co.	60	
Miscellaneous	275	515
Stephens County		
Empire Gas & Fuel Co.	85	
Gulf Production Co.	1,360	
Humble Oil & Refining Co.	840	
Magnolia Petroleum Co.	540	
Mid-Kansas Oil & Gas Co.	1,710	
Prairie Oil & Gas Co.	745	
Sinclair Oil & Gas Co.	105	
Sun Oil Co.	270	
The Texas Co.	1,680	
Texas Pacific Coal & Oil Co.	1,125	
Miscellaneous	8,200	16,660
Ranger		
Gulf Production Co.	325	
Humble Oil & Refining Co.	50	
Magnolia Petroleum Co.	620	
Mid-Kansas Oil & Gas Co.	235	
Panhandle Refining Co.	305	
Prairie Oil & Gas Co.	520	
Sinclair Oil & Gas Co.	375	
The Texas Co.	205	
T. & P. Coal & Oil Co.	990	
Miscellaneous	2,993	6,620
Moran		
Empire Gas & Fuel Co.	55	
The Texas Co.	120	
Texhoma Oil & Refining Co.	120	
Miscellaneous	2,335	2,630
Young County		
Gulf Production Co.	440	
Humble Oil & Refining Co.	725	
Mid-Kansas Oil & Gas Co.	30	
Panhandle Refining Co.	275	
Prairie Oil & Gas Co.	10	
Sinclair Oil & Gas Co.	415	
The Texas Co.	2,630	
Texhoma Oil & Refining Co.	455	
Miscellaneous	7,150	12,130
Eastland-Comanche		
Humble Oil & Refining Co.	195	
Magnolia Petroleum Co.	1,105	
Mid-Kansas Oil & Gas Co.	240	
Prairie Oil & Gas Co.	125	
Sinclair Oil & Gas Co.	30	
The Texas Co.	170	
Texas Pacific Coal & Oil Co.	140	
Miscellaneous	1,855	3,860
Miscellaneous Pools		
Wilbarger County	7,500	
Montague County	80	
Jack County	25	
Palo Pinto County	615	
Brown County	1,650	
Coleman County	65	
Callahan County	4,310	
Mitchell County	1,700	
Reagan County	21,285	
Scurry County	75	
Carson County	2,820	
Hutchinson County	655	
Wheeler County	60	
Gray County	30	40,870
Total this week		157,325
Total last week		155,295
Gain		2,030

Completions, Wichita County

Bonchil Co.'s No. 6 Beach, 15 bbls at 1,255 feet; Couch and others' No. 14 Donohoe, 100 bbls. at 1,328 feet; Fowler and others' No. 1 Gaston, dry at 1,610 feet; Hunter and others' No. 3 Bailey, dry at 450 feet; Texhoma Oil & Refining Co. and Hunter's No. 6 Bailey, 25 bbls. at 1,337 feet; Fuller and others' No. 1 Snow, dry at 1,826 feet; Magnolia Petroleum Co.'s No. 18 Maer, 28 bbls. at 1,214 feet; same Co.'s No. 19 Maer, 50 bbls. at 1,765 feet.

Wilbarger County

Atlantic Oil Producing Co.'s No. 1-B Waggoner, 55 bbls. at 1,444 feet; Bridwell and others' No. 8 Stephens, 80 bbls. at 2,294 feet; Hoffer Oil Corp.'s No. 1 Waggoner, dry at 2,360 feet; Humble Oil & Refining Co.'s No. 15 Stephens, 125 bbls. at 1,350 feet; Little Oil Co.'s No. 1 Youngblood, dry at 2,285 feet; Magnolia Petroleum Co.'s No. 67 H. & T. C., 70 bbls. at 1,677 feet; Oxford Oil Co.'s No. 2 Waggoner, 100 bbls. at 2,078 feet; The Texas Co.'s No. 202 Waggoner, dry at 2,545 feet.

Archer County

Barnes and others' No. 4 Wilson, 15 bbls. at 1,622 feet; Bridwell and others' No. 8 Wilson, 30 bbls. at 1,621 feet; Franklin and others' No. 7-B Parrish, dry at 1,655 feet; Oil Investment Co.'s No. 8 fee, 65 bbls. at 1,192 feet; Phillips Petroleum Co.'s No. 59 White, 90 bbls. at 1,608 feet; R. M. F. Oil Co.'s No. 9 Nichols, 75 bbls. at 1,614 feet; Riner and others' No. 12-B Wilson, 92 bbls. at 1,621 feet; Shappell and others' No. 9 Kemp & Kempner, dry at 1,812 feet; Texas Unity Oil Co.'s No. 1 Wilson, dry at 1,657 feet; Underwood Drilling Co.'s No. 1 Reilly, dry at 2,004 feet; United Central Oil Corp.'s No. 1 Wilson, dry at 1,735 feet; Archer Oil Co.'s No. 2 Coffield, dry at 1,520 feet; Jack Clark's No. 1 Cowan, 135 bbls. at 1,096 feet; Atlantic Oil Producing Co.'s No. 2 Hayter, dry at 1,354 feet; British American Oil Co.'s No. 4 Rogers, 30 bbls. at 1,294 feet; Christie Brothers' No. 3 Campbell Bank, 475 bbls. at 1,323 feet; same company's No. 4 Campbell Bank, 455 bbls. at 1,302 feet; Clark and others' No. 8 Echols, 52 bbls. at 1,317 feet; County Line Oil Co.'s No. 2-B Stampfli, dry at 1,404 feet; Duke and others' No. 1 Andrews, dry at 380 feet; Fisher and others' No. 4 Rogers, 123 bbls. at 1,350 feet; Humble Oil & Refining Co.'s No. 5 Ragle, 46 bbls. at 1,098 feet; Jennings and others' No. 1 Scott, dry at 1,263 feet; Magnolia Petroleum Co.'s No. 1 Wilborn, 37 bbls. at 1,321 feet; McKnight and others' No. 1 O'Donnell, 28 bbls. at 1,286 feet; Murchison and others' No. 5 Echols, 50 bbls. at 1,350 feet; same company's No. 1 Goldsmith, 50 bbls. at 1,354 feet; Richardson and others' No. 1 Ward, dry at 1,300 feet; Roxana Petroleum Co.'s No. 3 Kunkel, 27 bbls. at 1,165 feet; Shamrock Oil Co.'s No. 3 Baren, 60 bbls. at 1,090 feet; Shaw and others' No. 2 Rogers, 77 bbls. at 1,278 feet; The Texas Co.'s No. 26 Ragle, 36 bbls. at 1,091 feet; same company's No. 27 Ragle, 50 bbls. at 1,090 feet; Texhoma Oil & Refining Co.'s No. 14 Harbison, 87 bbls. at 1,359 feet; United Central Oil Corp.'s No. 6 Rogers, 95 bbls. at 1,351 feet.

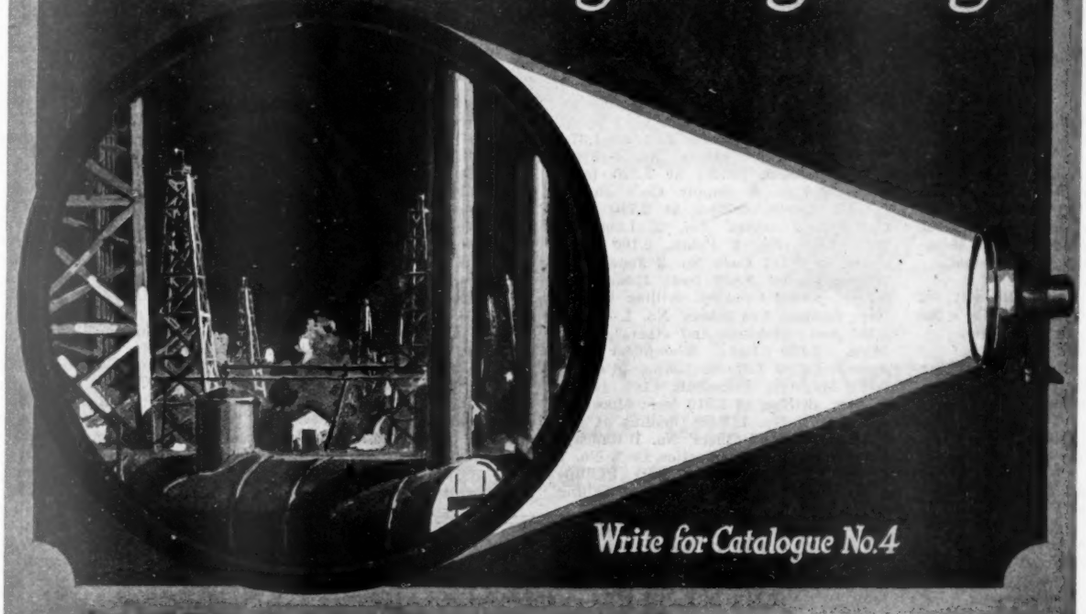
Young County

Cox and others' No. 1 Wilson, dry at 1,201 feet; Daniels and others' No. 1 Keeth, dry at 1,322 feet; Everest and others' No. 1 Womack, dry at 1,208 feet; F. H. E. Oil Co.'s No. 2 Groves, dry at 1,217 feet; Humble Oil & Refining Co.'s No. 8 Schlegel, 25 bbls. at 1,192 feet; same company's No. 9 Schegel, 230 bbls. at 1,184 feet; same

PYLE-O-LYTES

The Brighter Flood Lights

for all Industrial Night Lighting



Write for Catalogue No. 4

Increase Production—Cut Down Overhead

PYLE-O-LYTES

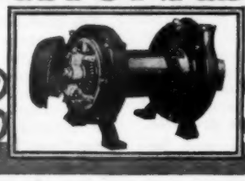
You'll find a wide range of types and sizes for every flood-lighting requirement.
Cases built of long-lived cast aluminum alloy that will outwear ordinary sheet metal units—Storm, Gas, Rust Proof.

STEAM TURBO-GENERATORS

Pyle-National Steam Turbo-Generators are made in five types—Capacities ranging from 500 watts to 7½ K. W. Steam consumption less than that of any other turbo-generator of equal size and capacity.

The PYLE-NATIONAL COMPANY

General Offices and Works:
1334-58 N. Kostner Ave
CHICAGO



In Canada:
The Holden Co., Ltd.
Montreal, Winnipeg,
Vancouver, Toronto

company's No. 10 Schegel, 120 bbls. at 1,185 feet; Knight and Hines' No. 1 Grubbs, dry at 1,007 feet; Murchison and others' No. 3 Haygood, dry at 1,050 feet; same company's No. 9 Schlegel, 47 bbls. oil and 10 bbls. water at 1,196 feet; same company's No. 12 Schlegel, 60 bbls. at 1,208 feet; same company's No. 13 Schlegel, 40 bbls. oil and 15 bbls. water at 1,198 feet; Norton and others' No. 4 Hamilton, 280 bbls. at 1,210 feet; same company's No. 5 Hamilton, dry at 1,215 feet; Panhandle Oil & Refining Co.'s No. 4 Gambrell, 160 bbls. at 1,213 feet; same company's No. 5 Gambrell, 190 bbls. at 1,214 feet; Plains Producing Co.'s No. 1 Campbell, dry at 1,046 feet; Reed and others' No. 1 Cloud, dry at 1,510 feet; Simms Oil Co.'s No. 4-B Carpenter, 162 bbls. at 1,041 feet; Stone and others' No. 1 Durham, dry at 1,403 feet; Street and others' No. 1 Finch, dry at 1,315 feet; The Texas Co.'s No. 18 Gambrell, 125 bbls. at 1,214 feet; Wichtex Oil Co.'s No. 1 Furr, dry at 1,504 feet.

Stephens County

Mid-Kansas Oil Co.'s No. 15 Hill, 20 bbls. at 3,294 feet; Barkley and others' No. 1 Pritchard, 1,960 bbls. at 3,540 feet; Knox and others' No. 1 Flournoy, dry at 3,870 feet; Landreth Production Co.'s No. 2 Gratz, 105 bbls. at 2,892 feet; Mook Texas Oil Co.'s No. 2 Head, dry at 3,955 feet; T. P. Coal & Oil Co.'s No. 6 Adams, 150 bbls. at 2,230 feet.

Eastland County

Calloway and others' No. 1 Wilson, 10 bbls. at 1,513 feet; Lightfoot and others' No. 1 Allen, dry at 3,264 feet; Magnolia Petroleum Co.'s No. 8 Hankins, 2 bbls. at 2,910 feet; same company's No. 5 Rogers, 25 bbls. at 2,928 feet; Parsons and others' No. 2 Motes, 10,000,000 feet of gas at 3,114 feet.

Carson County

Gates Oil Co.'s No. 1 Burnett, 42 bbls. at 3,058 feet; The Texas Co.'s No. 5 Burnett, 326 bbls. at 2,902 feet.

Throckmorton County

Cunningham and others' No. 1 Portwood, dry at 1,503 feet; Stile and others' No. 1 Reynolds, 4,000,000 feet of gas at 502 feet.

Scurry County

Northwest Oil Co.'s No. 2 Moore, 27 bbls. at 1,840 feet.

Palo Pinto County

Cameron and others' No. 2 Pollard, dry at 1,201 feet.

Callahan County

Urbon and others' No. 1 Alvord, dry at 2,245 feet.

Brown County

Mahlstedt Mook Oil Co.'s No. 8 Newton, 140 bbls. at 1,294 feet.

Iron County

Virginia Texas Petroleum Co.'s No. 1 Noelke, dry at 3,500 feet.

Reagan County

Texon Oil & Land Co.'s No. 2 Group 2 University, dry at 3,185 feet; same company's No. 3 Group 2 University, dry at 3,202 feet.

Crockett County

Konawha-Angelo Oil Co.'s No. 1 University, dry at 3,705 feet.

Young County Drilling

Anderson and others' No. 1 Dunagan is drilling at 560 feet; Christie Brothers' No. 1 McLaren, setting casing at 1,810 feet; Dunn and others' No. 1 Craig, drilling at 3,210 feet; F. H. E. Oil Co.'s No. 1 Dunagan, 300 feet; Flowers Brothers' No. 1 Farmer, cleaning out at 1,030 feet; Jake Hamon heirs' No. 2 Stovall, drilling at 3,490 feet; Hinson and others' No. 1 Lequaey, 2,155 feet; Holder and others' No. 1 Johnson, 50 feet; Humble Oil & Refining Co.'s No. 4 Campbell, 1,084 feet; No. 13 Schlegel, 1,172 feet; No. 14 Schlegel, 700 feet; No. 15 Schlegel, 790 feet; No. 16 Schlegel, 640 feet; Lea and others' No. 1 Vernon, 50 feet; Lowery and others' No. 1 Atchley, 50 feet; Mahlstedt Mook Oil Co.'s No. 1-A Logan, 1,252 feet; McGarr and others' No. 1 Scarborough, fishing at 2,250 feet; Mission Oil Co.'s No. 1 McKeicham, spudding; Mooers and others' No. 1 Doshe, drilling at 200 feet; Moore and others' No. 1 Thedford, 1,840 feet; Murchison and others' No. 15 Schlegel, 1,100 feet; Norton and others' No. 7 Hamilton, 815 feet; Panhandle Refining Co.'s No. 5 Gambrell, 1,131 feet; No. 6 Gambrell, 940 feet; No. 1 Van Hamert, 1,510 feet; Simms Oil Co.'s No. 1-A Carpenter, 800 feet; Sinclair Oil & Gas Co.'s No. 4 Moran, setting casing at 1,004 feet; Stovall and others' No. 3 fee, drilling at 3,225 feet; The Texas Co.'s No. 1 Carr, fishing at 1,416 feet; No. 15 Gambrell, drilling an oil sand at 1,213 feet; No. 22 Gambrell, drilling at 1,075 feet; No. 25 Gambrell, 1,025 feet; No. 1 Graham, 1,875 feet; Texhoma Oil & Refining Co.'s No. 9 Gambrell, 1,130 feet; Welch and others' No. 1 Cathey, 610 feet; Whitehead and others' No. 1-B Belnap Coal Co., underreaming; Wolf and others' No. 1 Haygood, setting casing at 1,016 feet; Wrenn and others' No. 1 Baley, drilling at 50 feet.

Stephens County Drilling

Cox and others' No. 1 Cunningham, underreaming; Humble Oil & Refining Co.'s No. 6 Keel, underreaming; Mid-Kansas Oil & Gas Co.'s No. 11 Atkins account 1, drilling at 2,090 feet; No. 13 Hill account 1, 2,370 feet; No. 16 Hill, fishing at 390 feet; Pender Production Co.'s No. 5 Keel, pulling casing at 2,655 feet; Phillips Petroleum Co.'s No. 1 Allen, drilling at 2,025 feet; Roeser and others No. 5 Bell, underreaming; Rosell Production Co.'s No. 2-B Brown, underreaming; Sun Oil Co.'s No. 5 Stoker, drilling at 940 feet; Texas Consolidated Oil Co.'s No. 6 Martin, setting casing at 3,797 feet; Texas Pacific Coal & Oil Co.'s No. 4 Kirtley, drilling at 1,374 feet; Walker and others' No. 4 First National Bank, fishing at 3,325 feet; Buckeye Pipe & Supply Co.'s No. 1 Pisgah Church, drilling at 2,740 feet; Carter and others' No. 2 Langford, 2,220 feet; No. 1 Polan, 2,100 feet; Curry Pool Oil Co.'s No. 2 Jones, setting casing at 2,810 feet; Edson and others' No. 2 Crowley, drilling at 350 feet; Gholson and others' No. 1 Young, 2,281 feet; Holcomb and others' No. 1 Ming, 2,750 feet; Kleinfelder and others' No. 2 Grimes, fishing at 2,525 feet; Magnolia Petroleum Co.'s No. 5 Walker, drilling at 2,910 feet; Moorman and others' No. 1 Pace, drilling at 400 feet; Pardee and others' No. 1 Ramsey, 400 feet; Pender Production Co.'s No. 1 Elder, gassing at 3,390 feet; Phillips Petroleum Co.'s No. 2 Moore, drilling at 1,975 feet; Prairie Oil & Gas Co.'s No. 4 Bruce, 300 feet; Simms Oil Co.'s No. 5 Decker, 925 feet; Texas Pacific Coal & Oil Co.'s No. 3 Gardenshire account 1, fishing at 3,535 feet; No. 1 Veale, drilling by casing at 4,370 feet; The Texas Co.'s No. 2 Grimes, underreaming; No. 4 Houston, drilling at 640 feet; No. 41-A Parks, underreaming.

Eastland County Drilling

Allen and others' No. 1 Allen, spudding; Carter and others' No. 5 Langford, spudding; Cornelius and others' No. 1 Brewer, drilling at 450 feet; Hoffman and others' No. 1 Lyerla, 400 feet; Mid-Kansas Oil & Gas Co.'s No. 10 Harrell acoount 2, 3,100 feet; Mook Texas Oil Co.'s No. 1 Williamson, fishing at 2,825 feet; Porter Development Co.'s No. 1 Downtain, cleaning out after a shot at 3,540 feet; Prairie Oil & Gas Co.'s No. 22 Roper, drilling at 1,250 feet; Reclamation Oil Co.'s No. 6 Bond, fishing at 1,725 feet; No. 7 Bond, fishing at 1,900 feet; Sinclair Oil & Gas Co.'s No. 8 Davis, spudding; States Oil Corp.'s No. 5 Homer, drilling at 3,842 feet; No. 7-A Loper, 1,350 feet; Urbin and others' No. 1 Cox, 1,980 feet, Westheimer and others' No. 9 Hamilton, 1,550 feet; Adams and others' No. 1 Donovan, seeting casing at 3,409 feet; Adams and others' No. 1 League, drilling at 3,255 feet; Burkett and others' No. 1 Robinson, 2,340 feet; Car-De-Zone Oil Co.'s No. 4 Stubblefield, 3,180 feet; Donley Drilling Co.'s No. 1 Stubblefield, cleaning out at 3,340 feet; Dorothy Oil Co.'s No. 2 Davenport, fishing at 3,380 feet; Lindsley and others' No. 2 Dulin, drilling at 300 feet; Pennant Oil & Gas Co.'s No. 8 Teston, 1,948 feet; Reeves and others' No. 1 Leveridge, 200 feet; Root and others' No. 1 Noble, 1,489 feet; Rumbaugh and others' No. 1 White, 420 feet; States Oil Corp.'s No. 6 Calvert, 2,600 feet; No. 1 Hise, 3,305 feet; Texas Development Co.'s No. 1 Eppler, 1,840 feet; Weaver Oil Corp.'s No. 2 Ammerman, 600 feet; No. 2 Dulin, 1,700 feet.

Wichita County Drilling

Ascot Co.'s No. 17-A Roller, drilling at 500 feet; Continental Oil Co.'s No. 6 Roller, plugging back to 1,050 feet; Wilcox and others' No. 1 Musgrove, fishing at 1,200 feet.

Archer County Drilling

Anderson and others' No. 1 Bloodworth, drilling at 820 feet; Bradford and others' No. 1 McMurtry, setting casing at 204 feet; Dolman and others' No. 1 Predeaux, fighting a cave a 430 feet; Fisher and others' No. 5 Rogers, drilling at 540 feet; Foster and others' No. 1 Andrews, underreaming; Griswold Oil Corp.'s No. 1 Martin, drilling at 450 feet; Jeffers and others' No. 2 Andrews, 970 feet; Magnolia Petroleum Co.'s No. 5 Rogers, feeling for sand at 1,316 feet; No. 6 Rogers, drilling at 1,040 feet; No. 1 Stampfli, plugging back to 1,406 feet; No. 8 Stampfli, drilling at 840 feet; Marland Oil Co.'s No. 2 Ward, coring a sand at 1,057 feet; Moore and others' No. 2 Rogers, drilling at 1,020 feet; Muse and others' No. 1 Lowe, drilling a sand at 1,262 feet; No. 2 Lowe, drilling at 100 feet; Norman Oil Co.'s No. 6 Goldsmith, 850 feet; Pace and others' No. 1 Watts, 620 feet; Richardson and others' No. 2 Ward, 1,047 feet; Shamrock Oil Co.'s No. 16-B Richardson, drilling a sand at 1,282 feet; No. 17-B Richardson is drilling at 700 feet; Sheldon and others' No. 1 Walsh, 960 feet; Strong and others' No. 1 Wright is drilling at 1,130 feet; The Texas Co.'s No. 11 Davis, 1,040 feet; No. 1 Phillips, 465 feet; United Central Oil Co.'s No. 8 Rogers, 1,125 feet; Verschoyle and others' No. 1 Bounds, 1,184 feet; Wolf and others' No. 1 Teague, 1,230 feet.

Brown County Drilling

Canyon Oil & Gas Co.'s No. 3 Ellsberry, drilling at 700 feet; Gillett and others' No. 3 Prather, 720 feet; Gillman and others' No. 9 Newton, 1,208 feet; No. 2 Teston, 1,140 feet; No. 3 Teston, 950 feet; No. 3 Moore, 410 feet; Hones and others' No. 2 De Busk, rerunning pipe at 2,345 feet; Lowe and others' No. 1 Williams, drilling at 1,023 feet; McMurray and others' No. 5 Newton, 790 feet; Moore and others' No. 1 Gafford, 900 feet; No. 1 Chambers, 520 feet; Moore & Wilson's No. 3 Westerman, spudding; Prairie Oil & Gas Co.'s No. 4 Gaines, drilling at 776 feet; Rhodes and others' No. 5 Prather, 1,240 feet.

Reagan County Drilling

Big Lake Oil Co.'s No. 17 University is fishing at 2,440 feet; No. 19 University, drilling at 2,685 feet; No. 20 University, fishing at 2,500 feet; No. 22 University, skidding rig; No. 23 University, pulling big pipe at 2,882 feet; No. 24 University, bailing at 2,811 feet; No. 25 University, fishing at 2,510 feet; No. 26 University, fishing at 535 feet; No. 27 University, drilling at 590 feet; No. 29 University, spudding; California Co.'s No. 1 University, drilling at 3,705 feet; McCamey and others' No. 1 University, plugging back to 3,105 feet; Texon Oil & Land Co.'s No. 6 Group 1 University, drilling at 2,875 feet; No. 10 Group 1 University, 1,835 feet; No. 11 Group 1 University, 2,010 feet; No. 12 Group 1 University, 2,300 feet; No. 13 Group 1 University, spudding.

Wildcats Drilling

Roberts County—Ergle and others' No. 1 Ledrick is underreaming.

Moore County—Amarillo Oil Co.'s No. 1-A Masterson is fighting gas at 2,360 feet.

Crockett County—Alidor Oil Co.'s No. 1 University is drilling at 2,815 feet.

Hutchinson County—Dixon Creek Oil Co.'s No. 2 Smith is drilling at 430 feet; Middleton and others' No. 1 Weatherly, in gpp at 705 feet; Panhandle Refining Co.'s No. 1 Perkins, drilling at 2,100 feet; Prairie Oil & Gas Co.'s No. 1 Shaw, drilling in blue shale at 3,401 feet.

Potter County—Amarillo Oil Co.'s No. 1 Warrick has a show of oil at 1,400 feet; No. 1 Bush, setting casing at 3,495 feet.

Carson County—American Refining Co.'s No. 1-C Burnett, drilling in lime at 1,755 feet; Crosbie Oil Co.'s No. 2 Burnett, drilling in lime at 2,685 feet; Magnolia Petroleum Co.'s No. 1 Burnett, fishing at 750 feet; Silk and others' No. 4 Burnett, drilling at 680 feet; The Texas Co.'s No. 3 M. C. Burnett, underreaming.

Gray County—Anderson and others' No. 1 Beavers, drilling in granite wash

(Continued on Page 121)

NEW FORM OF OIL AND GAS LEASE ON RESTRICTED ALLOTTED LANDS

By J L. Dwyer

On May 1, 1925, the new form of oil and gas lease applicable to the restricted allotted Indian lands went into effect, replacing the old style departmental lease.

The new lease is to be used on all Indian leases in Oklahoma excepting in the Osage Nation, and the change was brought about largely through the persistent work of the legal committee of the Mid-Continent Oil & Gas Association.

In the early days of the development of the Mid-Continent oil field the leases used were largely replicas of the old style leases which had endured since the discovery of petroleum on Oil Creek. In 1916, the Producers 88 form of oil and gas lease was evolved to meet the ever changing conditions of the business, and since that time several changes in the forms of leases have been made until about two years ago, when the new Mid-Continent form of lease was produced.

Containing many revisions and improvements of the former styles of commercial lease, the Mid-Continent lease conforms fairly well to the practical aspects of the business and is closely adapted to the conditions which characterize the leasing and drilling of prospective oil lands. It is the most popular form of lease in the oil country today.

It is a lamentable fact that the departmental oil and gas lease applying to restricted allotted Indian lands, has not kept pace with the development of the commercial lease, and this has worked to the great disadvantage of the Indians under the Department's jurisdiction. It is well recognized by persons familiar with the lease business that commercial leases have commanded a higher price than departmental leases in the same territory, owing to the inclination of individual operators particularly, to avoid the red tape so characteristic of the departmental leases.

The departmental lease applying to restricted allotted Indian lands was approved by the Secretary of the Interior on April 20, 1908, and has been revised twice sice that time; first February 6, 1911, and the other time June 29, 1911.

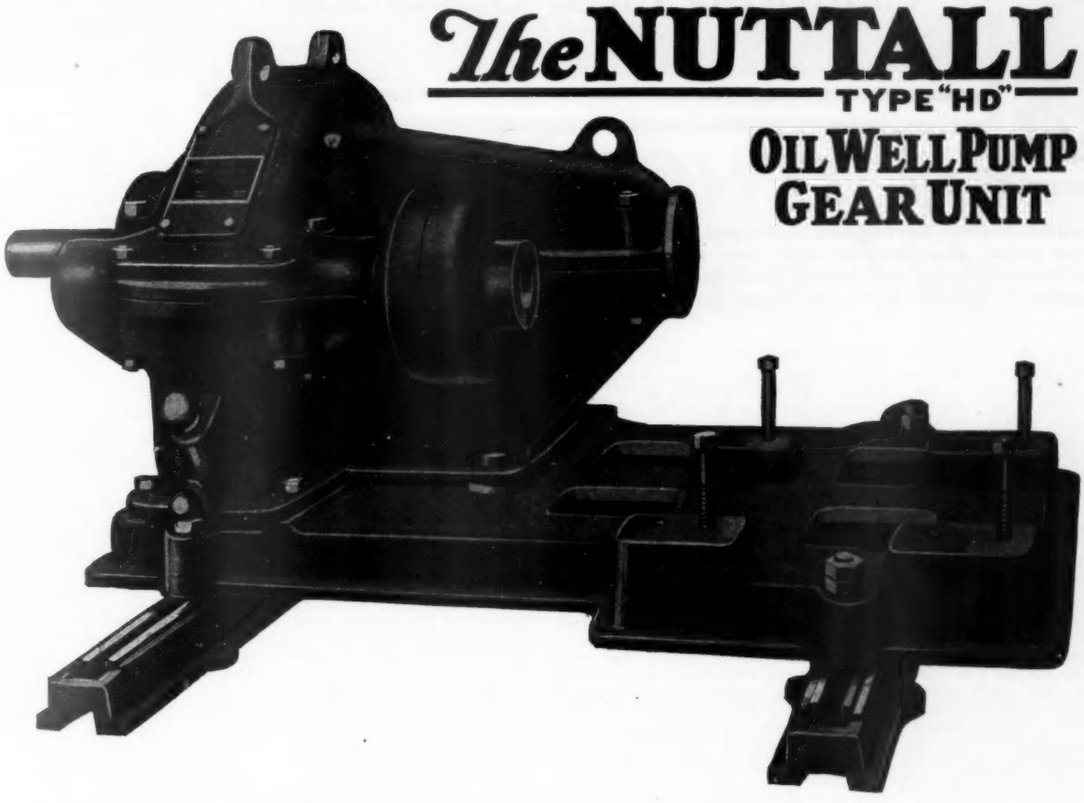
Where New Lease Applies

The new lease applies to all tribes excepting where tribal ownership of oil and gas rights are in effect, and the introduction of a uniform lease for restricted lands is an important step. It greatly simplifies administrative duties of the Interior Department, and a single lease form is highly desirable from the operator's standpoint for obvious reasons. It was the endeavor of the legal committee of the Mid-Continent Oil & Gas Association to obtain an oil and gas lease on restricted lands conforming to the commercial oil and gas lease as far the the basic differences between the two forms of leases would permit, and in this they were partly successful.

In the new form of lease, the granting clause has been changed and read "hereby demises, leases and lets." This is a change from the wording "grants, leases and lets" in the old style lease, and it has

(Continued on Page 121)

The NUTTALL TYPE "HD" OIL WELL PUMP GEAR UNIT



The Nuttall Oil Well Pump Gear Unit Completely Assembled on Bed Plate and Slide Rails Ready for Attaching Motor

We can only hit a few high spots in an advertisement, but have complete information in bulletin form which we will be glad to send on request.

This is a rugged, heavy-duty, herringbone gear, single reduction unit, for pumping, cleaning, bailing, handling rods, tubing, etc.

The gears operate in oil, in an oil-tight, dust-proof case. The pinion and shaft are integral, heat-treated and the bearings are oil ring type. The gear is a steel forging, heat-treated, with extra heavy rim for flywheel effect, and the gear shaft runs on "Hyatt" Roller Bearings.

Belt and chain adjustment, and alignment to motor shaft are greatly facilitated by slide rails and flexible coupling.

Complete information or a consulting engineer at your service for the asking.

Philadelphia Office
Westinghouse Bldg.,
30th & Walnut

R. D. NUTTALL COMPANY
PITTSBURGH PENNSYLVANIA

Chicago Office
2133 Conway Bldg.

Canadian Agent
LYMAN TUBE & SUPPLY CO.,
Toronto, Montreal

Nuttall

California Field Operations

By L. P. Stockman

Ventura Avenue, Beverly and Inglewood Fields attract attention with completions during past week of more than average importance. Production of California showing no signs of declining to any great extent. Dominguez capable of showing much greater output but being held down.

LOS ANGELES, Cal., May 2.—Three big wells in as many different areas focused the attention of California operators on the Ventura Avenue Field in Ventura County and on the Beverly and Inglewood Fields in Southern California. All three wells were of paramount importance and it is rather difficult to estimate which of the three will have the greatest effect on the immediate future production. Judging by the rapidity at which new wells are coming in, operators cannot anticipate any immediate relief from the present heavy production and, although Long Beach is still dropping, new production in other fields is practically offsetting this decline.

Production curves of Huntington, Long Beach, Santa Fe Springs and Torrance are flattening out, while those covering Ventura, Rosecrans and Inglewood are still continuing their upward trend. The latter field is still in the early stages of development but it is believed that the present production of approximately 5,000 bbls. a day will reach at least 20,000 bbls. within 6 months, unless some action is taken toward curtailing drilling. Heretofore most of the wells in this area have been comparatively small but within the past 30 days several excellent flowing wells have been finished, ranging from 400 to 1,200 bbls. a day. The ease and rapidity with which these holes can be drilled into production is being reflected in a steady increase in the field's output each week. At a cost not to exceed $35,000 operators in this area can spud in and complete a producer within 30 days. The small cost involved and the minimum amount of time required to pay out is tempting operators to drill, rather than any absolute need for production.

No Drop in Output Expected

Dominguez has dropped from its peak of 61,000 bbls. a day to around 45,000 bbls., but those interested in following California production should not lose sight of the fact that this condition is but temporary and due to the splendid cooperation of the Union and Shell Oil Cos. These two concerns, controlling practically 95 per cent of the productive area in the field, have very wisely refrained from drilling. There is little doubt but that production at Dominguez could have been doubled by additional drilling if conditions warranted it. Several well informed operators have been of the opinion for some time that California production would slump off materially and while hesitating to disagree with those better qualified to judge conditions during the balance of the current year, the writer is of the opinion that no immediate relief is in sight, unless some concerted action is taken toward curtailing much of the present unnecessary drilling. Some little relief will be had during the next six months, however, with the advent of the summer season and the increase in consumption during this period may lighten the burden somewhat. Crude prices at present are fairly high, considering the large amount of oil being produced, and if any change is made in the basic commodities it will be due to advances in refined oils. No justification, however, can be found for any immediate increase in view of the present heavy storage on hand, unless eastern markets show a marked improvement. Increased shipments of refined oils to the Atlantic Coast would be of material aid but practically all of the major companies are reluctant to ship gasoline to the Atlantic Seaboard because of the unfavorable financial returns. Refined oil shipments are on the increase, however, the average for the past few months being a little in excess of 15,000 bbls. a day. A similar amount is reaching the export markets.

Beverly Hills

Probably the most important development during the past week was the completion of No. 101 Fox by the Associated Oil Co. in the Beverly Hills section of the old Salt Lake Field. The well started flowing 1,272 bbls. of clean 25.2 gravity oil from 3,594 feet, a string of 8¾-inch being used to finish the hole. This completion means a good deal to the West Coast Oil Co., a subsidiary of the Associated, since this concern controls the greater majority of the prospective productive area. The importance of this completion lies in the fact that a new deep horizon has been discovered, which is apparently capable of considerable production. It is little too early to say just what effect the discovery will have on the immediate area, but due to the fact that the greater part of the acreage is in large blocks, it is not believed that any considerable amount of drilling will be undertaken immediately. The Associated will certainly not push development work unless forced to do so by adjoining holders, as this company has plenty of production and oil in storage at present. In addition to this, the company has another potential supply of crude at Seal Beach, where a new well, No. 1 Hellman, is being drilled on a practically proven structure.

It may be possible, of course, that considerable work will be undertaken in the Beverly Hills area, as the limits of the deep zone are still undefined and may extend beyond the holdings of the West Coast and Associated Oil Companies. The property on which the Associated drilled No. 101 Fox was leased some time ago from William Fox, the motion picture producer, and several others, who acquired it from the Arthur Letts' estate. The remaining part of the Letts' holdings was sold to the Janss Investment Co. for subdivision purposes. No information is available at present as to the restrictions imposed on this property and the possibility of increased drilling throughout the general area. A superficial analysis, however, indicates that the Associated and its subsidiary, the West Coast, control the greater part, if not practically all, of the potential area opened up for deep production. Later developments, however, may change the aspect of the situation.

Inglewood

The Associated furnished the biggest surprise of the week at Inglewood by bringing in a 1,086-bbl. well. The company's successful completion was No. 2 Vickers, finished at 2,548 feet, and instead of declining as wells usually do following completion, it is climbing under a good gas pressure and may reach 1,200 bbls. a day. The Associated had just previously finished a small well on this lease, No. 1 and did not anticipate so large a production from No. 2. No. 1 Vickers, the company's initial completion, in this field, was drilled to 2,809 feet and came in flowing 96 bbls. of 18.2 gravity oil which cut 2 per cent. The four remaining wells on the Vickers lease vary in depth from 400 to 1,400 feet. The Brownmoor Oil Co. is starting two new wells on the Brown property and should spud in well No. 1 within a short time.

The Mohawk landed a string of 8¼-inch in No. 3 Machada at 2,330 feet and picked up the pay shortly after drilling out. The hole looks fairly promising at 2,675 feet and indications point to a 200-bbl. pumper. The Petroleum Securities, Doheny, completed No. 1 Lloyd at 2,170 feet and will finish running the oil string tomorrow. No. 2 on this lease is standing cemented at 1,285 feet, while No. 3 is rigging up, with locations staked for Nos. 4, 5 and 6. Circulation was lost in No. 1 Riebel at 240 feet and as a result, very little progress was made during the week. New rigs are going up on this lease for Nos. 2, 3, 4, 9 and 10. No. 2 Cone is having a little pipe trouble around 500 feet, while the rig is being erected for No. 6. No. 5 is drilling ahead at 800 feet and a rig is going up for No. 7.

The Petroleum Midway has No. 2 Moynier in the oil sand at 2,100 feet, a successful water shut off having been effectd at 1,305 feet. A string of 12½-inch has been landed in No. 3 at 1,230 feet and work is scheduled to be resumed within the next few days. Material is on ground for No. 4 Moynier and No. 1 Twin Moynier. No. 5 Smith was recemented at 2,336 feet, as a successful water shut off was not secured on the 8¼ inch in the first attempt. Rigs are standing for Nos. 2 and 6 but it is not believed they will be spudded in until No. 5 is on production. The Standard, the discoverer of the field, is by far the largest single operator, although not the largest in point of production. Judging by the number of new locations staked, the company will maintain the distinction of running the largest number of strings for some time. No. 4 on Los Angeles Investment Lease No. 1, one of the field's best producers, is holding up remarkably well and bids fair to pay out well within 90 days. It is doubtful if this hole required over $35,000 to drill into production and since the overhead is not very high, it is a very profitable investment.

Other Wells Drilling

The Standard has several other drillers on Los Angeles Investment Lease No. 1 and is rigging up for additional work. No. 5 is down 2,360 feet, No. 6 at 1,630 feet and No. 8 at 1,310 feet. Nos. 7, 9, 10 and 11 are rigging up. On Los Angeles Investment Lease No. 2, Nos. 3 and 4 are rigs, while No. 2 is being cleaned out at 2,044 feet. No. 1 on this property is a deep test at 5,496 feet. On Vickers Lease No. 1, the company has a 1,220-foot hole in well No. 1 and 1,278 feet in well No. 5. Nos. 6 and 7 are just getting under way, the former at 575 feet and the latter at 410 feet. Well No. 2 on Vickers Lease No. 2 is being put on a pumping test, while well No. 3 is in the oil sand at 2,086 feet. Rigs for Nos. 4 and 5 are under construction. A string of 18-inch stove pipe is being landed in well No. 1 on Vickers Lease No. 3, while material is on ground for well No. 2.

The Universal Oil Co. is drilling ahead in a gray sand at 3,900 feet in No. 1 Youngsworth and since this hole has not shown the slightest indications from the grass roots down, the company is considering the advisability of hanging up at 4,000 feet. This test in the southwestern part of the field does not look at all promising. The Wilshire still refuses to give out any information on No. 1 Nolan, which is estimated to be down 2,700 feet. The Pan-American is held up with a fishing job in No. 7 Sentous at 3,076 feet, while the Shell is drilling ahead in No. 1 Rindge at 1,350 feet. The latter looks quite promising at this depth and recent developments indicate that production will be secured.

Ventura County

The Ventura Avenue Field yielded another gusher of considerable proportions during the week when No. 6 Notten of the General Petroleum was turned loose. The well, which is a redrill, having been deepened to 4,584 feet, tanked 4,753 bbls. during the first 24 hours. The oil, which is flowing through two beans, a 1-inch and a 5/8-inch, is practically clean and tests 30.8 degrees. The completion of this hole gives the General Petroleum the distinction of having the largest

TANKER SHIPMENTS FROM LOS ANGELES TO ATLANTIC AND GULF COAST PORTS

Following is a list of tankers, date departed, destination, kind of cargo and amount in barrels:

Airo, April 20, New York, refined	75,816
R. J. Hanna, April 24, New York, crude	79,315
Joseph Seep, April 25, New York, refined	75,430
Agwisun, April 25, New York, crude	80,960
Joseph M. Cudahy, April 26, New York, refined	75,082
Agwimex, April 26, Baltimore, crude	95,387
Standard, April 28, New York, crude	116,449
Coastwise	
W. S. Miller, April 21, Richmond, crude	74,817
Paul Shoup, April 21, Avon, crude	80,362
Montebello, April 22, Oleum, crude	75,416
Betterton, April 22, Avon, crude	80,273
K. R. Kingsburg, April 23, Richmond, crude	83,159
Mericos H. Whittier, April 23, Avon, crude	80,779
J. A. Moffett, April 25, Portland, fuel	64,723
La Placentia, April 25, Martinez, crude	75,090
W. S. Miller, April 26, Richmond, crude	74,985
Exports	
San Roberto (Br.), April 22, England, refined	67,116
G. Harrison Smith (Br.), April 23, Chile, fuel	122,014
Meton, April 23, Manila, fuel	75,802
Los Angeles, April 23, Vancouver, fuel	70,094
Salina, April 24, Balboa, fuel	66,350
F. H. Hillman, April 24, London, refined	113,167
H. T. Harper, April 25, New Zealand, refined	30,863
Tacito (Argentine), April 26, Buenos Aires, fuel	65,479
From Ventura	
Frank H. Buck, April 22, Avon, crude	61,095
Oleum, April 25, Oleum, crude	30,860
Frank H. Buck, April 26, Avon, crude	63,211
From Port San Luis	
La Placentia, April 21, Oleum, crude	77,149
San Antonio, April 23, San Francirco, fuel	55,987
From San Francisco	
Tejon, April 21, Portland, fuel	55,718
Atlas, April 21, Grays Harbor, refined	14,896
San Gaspar (Br.), April 21, Valparaiso, fuel	106,411
Charlie Watson, April 21, Eureka, refined	15,197
Mojave, April 22, Everett, fuel	72,998
Standard Service, April 22, Vancouver, refined	9,180
El Segundo, April 23, Point Wells, refined	30,611
Gargoyle, April 24, Philadelphia, refined	81,029
Lubrico, April 25, Balboa, fuel	86,094
Richmond, April 25, Point Wells, fuel	62,905
Wm. F. Herrin, April 25, Honolulu, fuel	48,352

We Are Known by the Companies We Represent

Axelson PRODUCTS

OXY-ACETYLENE THE Erbic SYSTEM APPARATUS

"Camel Hair" Belting & "Camel Hair" Belt Clamps

DONOVAN —BOILERS—

DREADNAUGHT ROTARY EQUIPMENT

FRICK-REID Light Plants ~ Rubber Belting

J&L CASING · TUBING · LINE PIPE

JOSEPH REID GAS ENGINE CO.

JOHNS-MANVILLE —PACKINGS—

NATIONAL TRANSIT PUMP AND MACHINE CO.

RATIGAN PUMPING SPECIALTIES

ROEBLING WIRE LINES

~~STANDARD~~ Seamless Casing, Drill Pipe and Tubing

WARREN STEAM ENGINES

WHITLOCK GUARANTEED CORDAGE

Tell me thy company, and I will tell thee what thou art.
—CERVANTES.

SEVEN YEARS ago on the Sands Lease of the Triangle Oil Company in the Burkburnett Oil Field a 20 h. p. Reid Gas Engine was installed and begun running under the direction of Mr. Matt Ruyle.

Today the same Engine, under the direction of the same man performs the same duty of pumping three wells over 1,800 feet deep each, and not once in these seven years has there been any long cessation in its faithful 24-hours-a-day service.

We have it from Mr. Ruyle that the total expense on this engine for the years mentioned does not amount to more than $15.00, although it is now planned to have the cylinder rebored as a matter of ultimate economy.

This is one of hundreds of instances coming to our attention which illustrate the extraordinary service in Reid Engines when properly handled.

Frick-Reid Supply Co.

Tulsa, Okla. . . . . Pittsburgh, Pa.

West of the Mississippi ~ Stores Everywhere

East of the Mississippi ~ The Frick & Lindsay Co.

Oil Country Equipment ~ the Most Human Organization in America

flowing well in the State at present. The well is not only an excellent one from a production standpoint but the quality of the oil produced is of the highest grade. The Associated's No. 17 Lloyd is standing cemented at 4,850 feet, while No. 18 is drilling ahead at 4,354 feet. No. 15 Lloyd is at 2,003 feet, while rigs are up for Nos. 21 and 22. The company is building a road into Hall Canyon and grading for a new rig. The Shell is running more strings in this field than the combined total of the General Petroleum and Associated and since the company has instructed Happy Yowell to build up production, additional wells will undoubtedly be spudded in from time to time. Two holes are being put down on the Edison lease, eight on the Gosnell property and two on the Taylor. No. 3 Edison is going ahead at 2,700 feet, while No. 4 is just getting started at 1,900 feet. No. 5 Gosnell was put on a production test at 4,011 feet but it did not make a satisfactory showing and the hole will require additional work. A shut off was not secured on No. 6 at 4,821 feet, and another cement job will be necessary. No. 8 Gosnell is standing cemented at 5,082 feet. while No. 9 is drilling in shale at 4,351 feet. No. 10 has been temporarily suspended at 411 feet but Nos. 11, 14 and 15 are going ahead, having just passed the 3,000-foot level. No. 8 Taylor is reported at 3,200 feet, while No. 9 has just been spudded in.

The Union is preparing to run a string of 6¼-inch in No. 1 Snyder on South Mountain and make a production test at 3,140 feet. The Tehmescal Petroleum, E. L. Doheny, Jr., and associates, is making rather slow progress with its second hole on Section 4-4-18, but barring mechanical trouble, should finish a successful producer shortly. E. J. Miley has not yet secured the approval of the Mining Bureau on the shut off in No. 1 Casitas but it is believed that work will be resumed within the next few days. This shallow hole on Red Mountain looks quite promising at 390 feet but it is not believed that a test will be made, unless the sand found, continues for another hundred feet or so.

Rosecrans

The closest thing to production at Rosecrans during the week was the Petroleum Midway's No. 1 Kreitz, a gasser making 15,000,000 feet from 4,033 feet. The company decided to make a production test in the upper zone at this depth, believing that the showings found would result in production. The well is still gassing, however, and has not shown any signs of giving way to any oil. None of the company's other wells was in a position to be tested but may, perhaps, be in a more advanced stage before the week comes to a close. The Sentinel has been bailing and swabbing No. 2 Athens for the past several days, but this 5,200-foot hole has not yet shown any improvement. No. 1 Cowan of the Standard, at 6,500 feet has practically determined the northeastern limits of the field and will undoubtedly retard any further work in this immediate area. That the Union considers the hole as conclusive proof is evidenced by the abandonment of No. 1 Horowitz, an offset just to the north. Small production at this great depth is not economically possible but the Standard will undoubtedly continue in order to make a thorough test. In the southern part of the field, No. 1 Rowell of the St. Helens is resolving into a deep test, with only an outside chance of securing production. The formation at 5,260 feet is a hard gray sand.

The United Oil Co. has taken over the wells and property of the Pacific Petroleum, having recently purchased the entire stock of this corporation, and will attempt to complete No. 3, now standing cemented at 4,211 feet. The bottom of the hole is 4,263 feet, at which depth drilling will be resumed. The Chanslor-Canfield Midway Oil Co. drilled out No. 1 Bilhorn and is now going ahead at 3,800 feet in a hard sand. This hole is a rank wildcat, if classed in the Rosecrans Field, but may pick up another structure to the north. The Shell and Pan-American are also attempting to pick up a new structure north of Rosecrans, but neither has yet met with any success. The Shell's No. 1 Leonis has just passed 5,707 feet. George F. Getty expected to have his No. 1 Athens on production before this but mechanical trouble developed and a little delay is being occasioned. The Julian Petroleum also ran into a fishing job and it is believed that the company will suspend work on this well, No. 1 Athens, rather than spend any considerable time fishing on a hole which does not look any too favorable for production. Seven stands of drill pipe and a core barrel were left in the hole at 4,932 feet. Nos. 2 and 3, however, are going ahead steadily, the former at 4,378 feet and the latter at 4,312 feet.

Dominguez

The Marland's deep test at Dominguez, in the southern part of the field, has just passed the 4,777-foot level, the log showing the formation to be a hard shale. Frequent cores are being taken and formation changes are checked closely. Nothing is expected, however, above 4,800 feet, in fact, it is doubtful if 5,000 feet would be considered sufficient depth, inasmuch as there should be about 300 feet between the two zones, if two exist. The Shell's exploration well, No. 1 Childs, is making hole at 5,600 feet in a sandy shale. This test has not yet shown anything in the way of oil or gas since passing through the upper horizon and the prospect of picking up a deep sand in the eastern part of the area is not any too favorable. No. 1 Hellman in the northeastern part of the field, is standing suspended at 6,075 feet. The Shell is still working with No. 1 Manuel, drilled into bottom water, at 4,479 feet, in an effort to overcome water trouble. No. 5, drilling in a hard shale at 3,977 feet, looks good for production. The Union returned No. 5 Callender to production after several months of hard work and the well is pumping approximately 150 bbls. of fluid, a considerable portion of which is water.

Torrance

Four new wells and two workovers were returned to production at Torrance during the past seven days. All of them were comparatively small and their combined output had very little effect on the total field production. The Petroleum Securities led the list with two new producers on Klienmeyer Lease B. The wells in question were Nos. 11 and 18, the former being finished at 3,790 feet and the latter at 3,787 feet, 8¼-inch oil strings being used in each case. No. 11 started off pumping 44 bbls. of 14.1 gravity oil which cut 5 per cent, while No. 18 made 38 bbls. of 14.3 gravity oil on the beam during the first 24 hours. These are two of the smallest wells which this lease has yielded to date, although the property is quite far out on the structure and never was gusher property, the average completion ranging from 50 bbls. to 150 bbls. No. 16 Del Amo of the Chanslor-Canfield Midway Oil Co. is rated at 92 bbls., the oil testing 15.8 degrees and showing a cut of 4 per cent. It was drilled to 3,370 feet and finished with an 8¼-inch string carrying 110 feet of 80 mesh screen. The company spudded in No. 27 Del Amo and made 600 feet of hole during the week in this well and 580 feet in No. 54. Rigs are going up for Nos. 103 and 104 with indications pointing to early spuds. No. 2 Dominguez was put on the beam at 3,815 feet after being plugged back from 5,091 feet, but sand trouble prevented a satisfactory test. George F. Getty closed his drilling campaign at Torrance by completing well No. 24 at 3,400 feet, a 6¼-inch liner being used to finish the hole. The initial output was 91 bbls. of 18.6 gravity oil which registered a cut of 4 per cent.

The General Petroleum is starting another well on the Carson Lease to be designated as No. 9, the rig for which is now being constructed. No. 20 Poggi is again off production, due to sand trouble, and this hole, together with No. 1, is being cleaned out. No. 1 Ellinwood of the Standard was placed on a pumping test during the early part of the week, after being cleaned out to bottom, 3,481 feet, but it was only good for 20 bbls. of fluid, 9 per cent of which was water. The Superior returned No. 13 Torrance to production, after completing a clean-out job and installing a compressor, and boosted its daily production 60 bbls. a day. The output is, however, showing a considerable cut.

Long Beach

The A. T. Jergins Syndicate put No. 3 Municipal at Long Beach on the beam after plugging back to 4,185 feet, but water trouble prevented a successful completion. The output is cutting approximately 75 per cent. The Federal Drilling Co. has staked a location for No. 1 Richmond and preparations should be started on rig construction with a short time. The Pan-American has rigs standing for Nos. 7 and 8 on the Union Pacific's right of way, but litigation with the city of Long Beach and the Jergins Syndicate is holding up work. The Jergins Syndicate is operating on a lease secured from the city of Long Beach and this concern is objecting to Nos. 7 and 8 on the Union Pacific lease as offsets would be required. Jergins pays the municipality 40 per cent royalty and he wants a reduction to meet the additional drilling costs if obliged to drill two offsets. The city dads want the money accruing from the royalty interests and so far the Pan-American has been unsuccessful in securing permission to go ahead.

The Standard has not yet found a sand of sufficient thickness and texture in No. 18 Bolsa Chica at Huntington Beach to warrant a test and while this extension well looks good at times, the showings soon disappear and gray sand again predominates. The hole at 5,437 feet is getting quite deep and must pick up gusher production to warrant the heavy drilling cost. The outlook is decidedly unfavorable.

Rideout Heights

The Pan-American landed a string of 6¼-inch in No. 1 Jesurum at Rideout Heights, after successfully recovering from a fishing job of several months' duration. It is scheduled to be drilled out during the coming week and if oil is present the company will give the well a test within a short time. The Petroleum Midway is only working with one of its tests, No. 1 Hamburg, which has been carried down to 4,620 feet. The 8¼-inch is bad around 3,000 feet and the company is swedging. The Standard has plugged back No. 21 Home in the old Whittier Field from 5,045 feet to 3,995 feet, after concluding that a deep sand does not exist in the immediate area.

Richfield

The Chicksan Oil Co. finished its second deep zone producer at Richfield when No. 2 Bradford was turned loose from 4,810 feet. It started flowing 510 bbls. of 22.8 gravity oil and, while the production has not yet cleaned up, the present cut of 8 per cent is expected to be cut in half when the well has been on production for a few days. It is doubtful, however, if oil cutting less than 4 per cent will be secured, as there is a little water problem at this point which has not yet been solved. The Chicksan is going right ahead with No. 3 which was spudded in a short time ago, and is at present making hole at 1,405 feet. The Delaney-Craig Oil Co. is coring in well No. 1 at 1,400 feet, while the Tonner Oil Co. is going ahead in No. 1 Swan at 1,730 feet. The Union ran into a fishing job with No. 1 Tuffree at 4,806 feet and will be temporarily delayed until the fish is recovered.

The Birch Royer Oil Co. is preparing to make a test at Coyote, as the indications found at 4,321 feet looked quite promising. The Standard is cleaning out No. 40 Emory at 4,030 feet and is going ahead in No. 101 Murphy at 4,721 feet. No. 100 Murphy is standing cemented at 4,163 feet, while No. 102 is standing cemented at 4,460 feet. The Union is drilling ahead in No. 1 Olinda at Fullerton in a conglomerate at 1,770 feet and while No. 2 Olinda has been rigged up, the hole has not yet been spudded in, as the location is rather inaccessible and requires considerable preliminary work, building roads, bringing in a water line, etc. The Chanslor-Canfield Midway Oil Co. spudded in No. 97 Olinda and,

(Continued on Page 110)

News of Mexican Fields

By George Blardone

TAMPICO, Mexico, April 28.—Mexican Gulf Oil Co.'s No. 25, Lot 4, Corcovado, came in good for 5,000 bbls. from the shallow depth of 1,640 feet. This is the shallowest well yet drilled in Corcovado or along its immediate boundaries. The well has been shut in as no pipe line facilities have yet been afforded Lot 4. This No. 25 lies northeast from La Corona Petroleum Co.'s No. 3, Lot 11, Corcovado, reported for salt water after making around 7,000 bbls. a day for several weeks. The Gulf has drilled 13 dry holes in Corcovado to date, 10 of which have been in Lot 4.

Mexican Petroleum Co.'s No. 5 San Pedro, just offsetting the Corcovado boundary in the northern fields, which was completed April 18 for 15,000 bbls. at the very shallow depth of 1,805 feet, went badly to salt water while flowing around 16,000 bbls. The well made less than 50,000 bbls. during its few days of life. It may come back as a stripper on a choker. When tested it flowed for an average of 23,000 bbls. It was then put on regular exploitation at 16,000 bbls. a day, and the water soon followed. It was this well that offset La Corona Petroleum Co.'s No. 3, Lot 11 Corcovado, which had been a consistent producer of 7,000 bbls. from 2,140 feet for several weeks, and then showed salt water and sediment. Now La Corona's No. 7, Lot 6 Corcovado, which was doing something a little over 2,000 bbls. a day has quit flowing oil and is producing nothing but gas. In sum, this leaves only one real producer in Corcovado at this time, the Leonard well, No. 1, Lot 11, south of the Corona No. 3, which was bridged for a while, but which is now doing an average of 7,000 bbls. The "pocket" theory is gaining ground following the sensational failure of the Mexican Petroleum No. 5, which was so shallow, the district considered, as to warrant it lasting a while anyway.

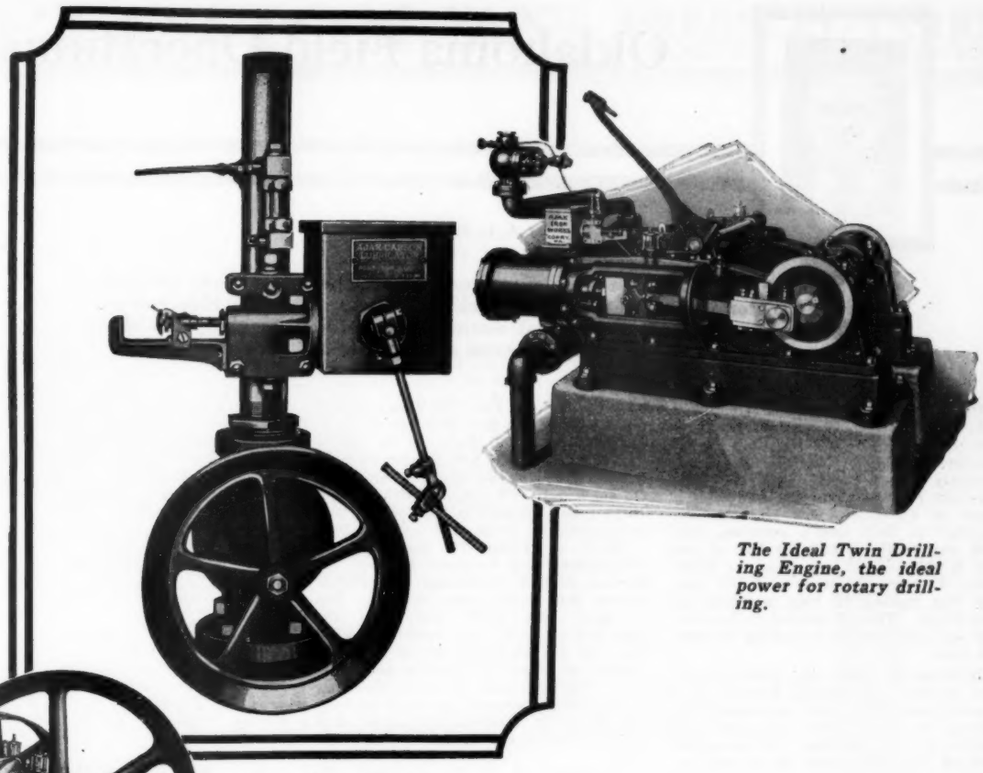
Week's Completions

Apart from the well already reported for last week, i.e., a 5,000-bbl. Federal zone well in the Panuco district of the northern fields for the National Lines, there were some 12 other completions of which three can be placed in the production column with new production of 6,025 bbls. There were nine failures. All completions were in the northern fields.

Cia. Petroleum Franco Espanola (Marland interests), will do no further drilling on its No. 24 Limon, which has already been reported as stopping at 1,855 feet, where a show of 1,500 bbls. was at first reported. A test of the well resulted in its being reported a completion at the depth noted good for 4,000 bbls. Transcontinental Petroleum Co.'s No. 28 Paciencia, just north of Cacalilao, is finished good for 2,000 bbls. at the shallow depth of 1,705 feet. Down in El Barco, Mexican Gulf Oil Co. has finished No. 69 El Barco at 2,500 feet, with a rating of 25 bbls.

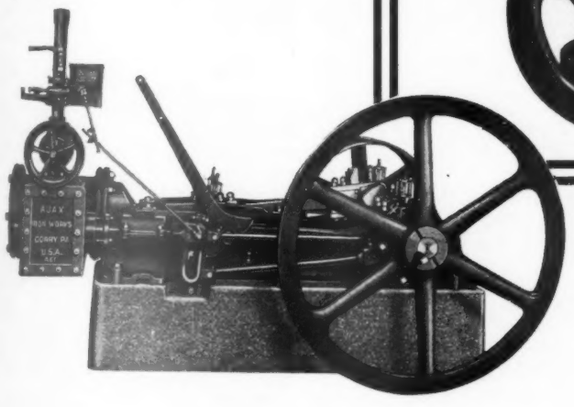
The failures during the week were: In the Cacalilao sector, International Petroleum Co.'s No. 169, Lot 5, is a dry hole at 2,362 feet. In the Panuco district, Gilliam and others' No. 4, Lot 13 Lomas y Llanos, is a dry hole at 2,210 feet. In the Corcovado, Comos Oil Co.'s No. 5 Lot G, is dry at 2,320 feet; Transcontinental Petroleum Co.'s No. 2, Lot 6, is the same at 2,250 feet; Mexican Gulf Oil Co.'s No. 23, Lot 4, duster at 2,350, and No. 1 Chapacao, just northwest of there, is also dry at 2,550 feet. In the Marland Field, Cia. Petroleum Franco Espanola, No. 23 Limon finished a dry hole at 2,578 feet. In the Topila

(Continued on Page 108)



The Ideal Twin Drilling Engine, the ideal power for rotary drilling.

The original Ajax Engine, famous in every oil field.



The Ajax Carson Lubricator—the best protection for the steam drilling engine.

The Best Lubrication

The Ajax-Carson force feed and sight feed lubrication gives your engines the protection of proper lubrication under all conditions. Automatically adjusting itself to the engine speed it neither starves the engine nor does it waste a drop of oil.

It is the valveless force feed lubricator. Cannot get out of order.

Made by

AJAX IRON WORKS

Corry, Pa.

Distributed by

NATIONAL SUPPLY COMPANIES

In every oil field

34131

AJAX ENGINES

AJAX

AJAX ENGINES

Oklahoma Field Operations

By J. L. Dwyer

Okmulgee was center last week of interesting developments. Gypsy Oil Co.'s No. 1 Proctor seems to have drilled itself in and was making 30 bbls. hourly. May mean greater activity in that section. Bement well pumping 215 bbls. daily. Sinclair well at Garber deepened and making 2,460 bbls.

The territory surrounding Okmulgee had several interesting developments last week. The Gypsy Oil Co.'s No. 1 Proctor, SW cor. NE, Section 35-8-8 evidently drilled itself in, as the tools were not run back into the hole after a depth of 3,275 feet was reached. As recorded in last week's columns, this well was making 5,000,000 feet of gas and 5 bbls. of oil per hour, at 3,268 feet. It was deepened to 3,275 feet, and was making 12 bbls. per hour at this depth. Then it started to increase and at 3,280 feet, it is making 30 bbls. per hour.

It is hardly likely that this will connect up with the Wewoka Field as it is 3 miles east, but it will undoubtedly result in the development of a good production in this locality. To the southeast of the well, there is a good expanse of land that is untested before the deep dry hole of Harry Diamond and others is reached; and there is ample area for a pool of good spread. The original well, the gas well of Johnson & Ash, a quarter mile east and one location north of the Gypsy well may be on top of the structure. The new sand found in the Gypsy well correlates closely with the Dutcher formation found in the Smith Pool at Wewoka.

Southwest of Okmulgee, the Independent Oil & Gas Co. and C. L. McMahon have a good Wilcox producer in No. 1 Carolina, NE cor. SW SW Section 33-12-11. The discovery well in this pool was drilled by the Josey Oil Co. last fall. The pool was extended by the Independent Oil & Gas Co. who completed a well a quarter mile south. The recent find extends the pool a location south and a location west. Sand in Independent-McMahon's No. 1 Carolina was 3,617-59 feet and the well is doing a little better than 450 bbls. Sand is reported to be running considerably higher than the Independent well, and as the new well is being drilled a foot or so deeper each day, it may become the best producer in the pool.

Southeast of Okmulgee, the Wilcox well of W. B. Pine, No. 2 Hawkins, SE cor. Section 20-12-14 is holding at about 125 bbls. per day.

Gets Good Dutcher Well

West of Okmulgee E. R. Black has drilled in a good Dutcher well, NE cor. SW SE Section 28-13-11 as a reward for his persistent activities in this district. Sand was 2,385-87 feet, and the well is estimated at 300 bbls.

The well of the Simms Oil Co. SW cor. NW Section 31-12-12 drilled in a month ago has been gradually deepened. Top of sand was 3.287 feet, and the well was drilled to 3,295 feet three weeks ago. Last week it was drilled 5 feet deeper, making a total depth of 3,300 feet. It is producing 145 bbls. of oil and a little water. Speculation as to the origin of the water is very much divided. At first it was thought that the water was coming from the sand, but when it did not increase with deeper drilling and the production held up steadily, it is believed that the water is coming from behind the pipe.

Near Wetumka, the Superior Oil Corp. and Fuhrman Petroleum Co. have a disappointment in No. 1 Buck, SW cor. SW SE Section 20-9-10, where a hole full of water was encountered at 3,310 feet.

In the Papoose Pool, the Kingwood Oil Co. completed the first deep test which is a failure at 4,240 feet. It is No. 4 Sands, SW cor. SE SW Section 35-10-9. North of the Papoose Pool the Kingwood Oil Co.'s well, SW cor. NE SE, Section 16-10-9 has 16,000,000 feet of gas and is spraying oil from sand 3,000-42 feet.

West of Cromwell, the well of Wrightsman and Gardner, NE cor. SE Section 31-10-7 threatened to produce before the water was struck. Top of sand was 3,735 feet, and the hole full of water was struck at 3,750 feet. It will be drilled deeper as in the opinion of James H. Gardner, part owner of the well, this is in the Gilcrease sand and an attempt to drill down to the Cromwell sand will be made. The well is about 6 miles southwest of Cromwell.

Southwest of the Papoose Pool, the W. R. Ramsey NW cor. SW SW Section 23-9-9 topped a sand at 3,428 feet cable measurement and has made two small flows. It will be tested out.

Northwest of Okmulgee, the well of Waite Phillips and the Darby Petroleum Co. in Section 15-14-10 topped the Misener sand at 3,300 feet cable measurement, and has 3,000 feet of oil standing in the hole.

Near Davenport the Magnolia Petroleum Co.'s No. 1 Kalla NE cor. SE SE Section 7-14-5 topped sand at 3,538 feet and drilled into 3,549 feet. The well at first made 35 bbls. of oil and 15 bbls. of water on the swab and is now making 18 bbls. of oil and 7 bbls. of water. This well had a dry sand 3,490-3,530 feet. At 3,549 feet the sand began to lighten up.

South of the March Pool, the Josey Oil Co. has drilled a well on down to the Wilcox sand in No. 5 Laughlin, SE cor. SE Section 35-19-5. This well was completed in January for 732 bbls. from sand 3,331-38 feet. It was drilled down and topped the Wilcox sand 3,416 feet. The sand was penetrated to 3,456 feet and the well made 890 bbls. the first 24 hours, and 860 bbls. the second 24 hours.

Bement Well Pumping

The Bement Oil Co.'s well SE cor. SW SE Section 30-23-5 is pumping 215 bbls. daily. The Magnolia Petroleum Co. has made a location offsetting the Bement well.

The Bu-Vi-Bar Oil Co. has made a location offsetting its discovery well, SW cor, Section 15-21-1w. The location is the SE cor. Section 16-21-1w.

At Garber, the Sinclair Oil & Gas Co. has been deepening No. 25 Belveal. Top of sand was 4,377 feet, and the total depth of the well at present is 4.403 feet. It is producing 2,460 bbls. daily, and the deeper drilling has not increased the production.

At Tonkawa, Louis Freedman has a well that is being watched carefully by the companies. It is in the SE cor. NE Section 28-25-1w, and had a showing above the lime. The lime was topped at 4,192 feet, and is reported to be running very high. It is a half mile from production.

The Braman Pool was extended a half mile south by Comar Oil Co.'s No. 1 Murphy NW cor. SW SE Section 28-29-1w, which had sand 1,968-71 feet and is good for 500 bbls. The Comar Oil Co.'s No. 4 Duncan NW cor. NE SW, Section 21-29-1w, made a half bbl. oil and 3 bbls. water every 3 hours from sand at 1,908-24 feet, total depth 1,926 feet.

The Comar Oil Co. had a hole full of water in No. 4 Harvell NE cor. SW NE Section 21-29-1w. Sand was 1,915-24 feet, total depth 1,926 feet.

The average daily production of the principal fields in Oklahoma for the week ending April 29 follows:

Wewoka Field

Company—	Wells	Prod.
Berry Petroleum Co.	1	430
Boggs & Sykes	7	870
Dixie Oil Co.	35	2,152
Gypsy Oil Co.	2	19
Homaokla Oil Co.	2	40
Independent Oil & Gas Co.	8	216
Lewis & Clark	1	47
Magnolia Petroleum Co.	26	1,828
Producers & Refiners	18	1,781
W. R. Ramsey	1	178
W. R. Ramsey et al	8	3,798
Roxana Petroleum Corp.	3	355
Shaffer Oil & Ref. Co.	7	1,442
Total	119	13,156

Yeager Pool

Dixie Oil Co.	1	419

South Welcetka Field

Magnolia Petroleum Co.	4	233
Mid-Kansas Oil & Gas Co.	9	380
Tidal Osage Oil Co.	15	1,374
Total	28	1,987

Papoose Production

Amerada Petroleum Corp.	3	1,095
Arkansas Fuel Oil Co.	1	3
Berry Petroleum Co.	3	152
Carter Oil Co.	8	1,622
Mid-Continent Pet. Corp.	15	3,214
Foster Investment Co.	6	309
Gilcrease Oil Co.	3	46
Gilcrease Oil Co. and Papoose Oil Co.	1	5
Gypsy Oil Co.	3	727
Independent Oil & Gas Co.	15	4,237
Independent Oil & Gas and Atlantic Oil Prod. Co.	1	117
Indian Ter. Illum. Oil Co.	4	653
Josey Oil Co.	2	256
Kingwood Oil Co.	10	1,133
Magnolia Oil Co.	2	24
Continental Oil Corp.	1	43
Papoose Oil Co.	12	718
Prairie Oil & Gas Co.	7	708
Phillips Petroleum Co.	2	1,043
Robinson and Amerada Petroleum Co.	6	1,364
Skelly Oil Co.	1	97
T. B. Slick et al	36	5,177
T. B. Slick and Gypsy Oil Co.	4	948
Transcontinental Oil Co.	11	1,122
H. F. Wilcox Oil & Gas	1	65
Jennings Bros. et al	1	46
Mid-West & Gulf Oil Co.	1	190
Total	160	25,114

Cromwell Field

Amerada Petroleum Corp.	10	510
Berry Petroleum Co.	1	43
Burke-Greis	4	301
Carter Oil Co.	41	5,904
Carter Oil and Gardner Pet. Co.	8	43
Central National Petroleum Co.	8	577
Continental Oil Co.	4	820
Mid-Continent Petroleum Corp.	32	1,214
Empire Gas & Fuel Co.	3	231
Gilliland Oil Co.	8	68
Gypsy Oil Co.	49	7,409
Gypsy Oil Co. and Laurel Oil Co.	5	1,551
T. B. Hoffer et al	3	42
Holmes & Jarvis	1	5
Houston Oil & Gas Co.	3	950
Independent Oil & Gas Co.	3	38
Kingwood Oil Co. and Sinclair Oil & Gas Co.	4	49
McMan Oil & Gas Co.	11	528
Mid-Kansas Oil & Gas Co.	4	285
Prairie Oil & Gas Co.	5	1,077
Pure Oil Co.	9	112
Roxana Petroleum Co.	22	1,762
Shaffer Oil & Ref. Co.	8	354
Sinclair Oil & Gas and Gardner Petroleum Co.	6	2,921
Sinclair Oil & Gas Co.	27	7,837
Snowden & McSweeney	3	543
Southwestern Petroleum Co.	17	3,936
Superior Oil Co.	6	200
Tidal-Osage Oil Co.	11	1,433
H. F. Wilcox Oil & Gas Co.	7	59
Waite Phillips Petroleum Co.	13	1,403
Devonian Oil Co.	1	169
White Eagle Oil & Ref. Co.	1	43
Total	341	42,517

Burbank Field

Lewis Oil Co.	3	474
Carter Oil Co.	258	8,409
Mid-Continent Petroleum Co.	106	2,132
Comar Oil Co.	7	124
Devonian Oil Co.	16	210
Gypsy Oil Co.	196	4,091
Kewanee Oil & Gas Co.	25	388
Laurel Oil & Gas Co.	16	215
Lorraine Petroleum Co.	15	127
Midland Oil Co.	37	962
Mid-Kansas Oil & Gas Co.	40	1,166
Peters & Oliphant	2	127
Phillips Petroleum Co.	143	14,197
Phillips Petroleum Co. and Delmar Oil Co.	16	1,266
Phillips Pet. Co. and Skelly Oil Co.	176	3,901
Prairie Oil & Gas Co.	106	1,967
Producers & Refiners Corp.	29	376
Roxana Petroleum Corp.	65	619
Simons & Moore	29	221
Sinclair Oil & Gas Co.	144	2,266
Skelly Oil Co.	23	686
Tidal-Osage Oil Co.	43	677
The Texas Co.	14	971
Twin State Oil Co.	24	626
Total	1,523	44,471

Kay County Extensions

George S Bole	3	331
Carter Oil Co.	11	1,662
Comar Oil Co.	19	1,000
Mid-Continent Petroleum Co.	16	1,100
Gypsy Oil Co.	19	906
Laurel Oil & Gas Co.	5	151
Mid-Kansas Oil & Gas Co.	16	845
Phillips Petroleum Co.	31	3,311
Prairie Oil & Gas Co.	4	132
Pure Oil Co.	5	350
Roxana Petroleum Co.	8	330
Dye & Tomlinson	8	470
Skelly Oil Co. and Phillips Petroleum Co.	30	330
Sinclair Oil & Gas Co.	5	333
The Texas Co.	16	554
Twin State Oil Co.	15	1,000
Total	195	11,424

Holdenville District Pipe Line Runs

Mid-Continent Petroleum Co.	8,310
Gulf Pipe Line Co.	4,317
Magnolia Petroleum Co.	10,150
Oklahoma Pipe Line Co.	14,000
Ozark Pipe Line Co.	7,541
Prairie Oil & Gas Co.	18,194
Producers & Refiners Corp.	1,341
Shaffer Oil & Ref.	1,700
Sinclair Oil & Gas Co.	17,941
Empire Pipe Line Co.	2,033
Pure Pipe Line Co.	307
Consolidated Pipe Line Co.	1,400
Storage	42
Total	67,100

Okmulgee District

The Laurel Oil & Gas Co. has completed No. 3, NE cor. NW SW Section 16-13-15. Sand was 2,308-11 feet and the well is good for 25 bbls. after a 10-quart shot.

E. R. Black has a rig on the ground for No. 2, SE cor. NW NE Section 27-13-11. John Brock, Jr.'s No. 10 Thomas CEL NE SW Section 32-13-11, is drilling at 550 feet.

The Penmar Oil Co. has a rig up for No. 2, NW cor. SW SE Section 11-13-12. J. W. Moore has a rig up to drill an old well deeper in No. 1, NE cor. SE SW Section 15-12-11. The Continental Oil Co. has a rig up for No. 1, NW cor. NE Section 20-12-12.

Monesett and others are drilling at 900 feet in No. 5, NE cor. NW NW Section 29-13-13. This is a twin well. Mead & McGranahan have completed No. 5 Scott, SW cor. SE NE Section 15-13-14. Sand was 1,932-41 feet with first oil at 1,936 feet. The well was shot with 20 quarts and is good for 50 bbls. It is a twin well.

The Tidal Oil Co. and others have spudded No. 3, NE cor. SE SW Section 2-11-11. The Tidal Osage Oil Co. and others are building the rig for No. 1, SW cor. NW SW Section 2-11-11.

The Windsor Oil Co. has completed No. 1 Grayson, SE cor. NW Section 22-11-11. Sand was 2,629-35 feet, and the well is good for 420 bbls. natural. It has completed No. 2 Grayson, SE cor. NE SW Section 22-11-11, for 375 bbls. from sand 2,482-2,503 feet.

Near Mounds

Creekmore Oil Co. has completed No. 1 Gills, SE cor. SW NW Section 14-16-11. A hole full of water was found in sand 2,888-2,911 feet. The well was plugged back to sand 1,862-94 feet and is making 20 bbls. natural on the pump.

Hilt and others have completed No. 2 C NE SE Section 7-16-12 for 35 bbls. natural in sand 2,162-80 feet. The Sheridian Oil Co. has completed No. 1, SE cor. NW NE Section 15-16-12, for 12,000,000 feet of gas from sand 1,903-18 feet.

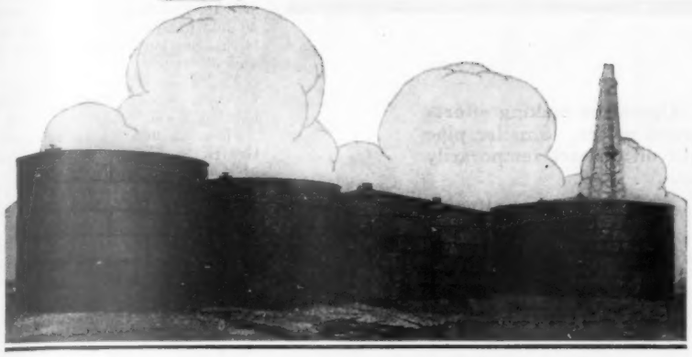
Ireland and others' No. 3 Maxwell, CNL NE NE Section 17-16-12, is dry and abandoned at 2,383 feet.

The Independent Oil & Gas Co.'s No. 9 Coleman, NE cor. SW NW Section 27-16-12, is completed for 430 bbls. natural from sand 2,532-50 feet.

The Sheldon Oil Co.'s No. 1-A, SE cor. SW Section 27-16-12, is completed for 35 bbls. natural from sand 2,152-62 feet. The Hope Oil Corn.'s No. 2 Vore, NE cor. SW Section 34-16-12, is good for 25 bbls. natural from sand 2,230-35 feet. The Hope Oil Corn.'s No. 3 Vore,

(Continued on Page 42)

PERFECTION VAPOR PRESSURE TANKS
WOOD, AND BOLTED STEEL TANKS



The picture above shows two 1,100-barrel Vapor Pressure steel storage tanks, two 1,000 gas tight tanks, both Perfections, and one 5,500 Perfection gas tight storage tank. They have been erected in the Vernon Field, North Texas. The tanks belong to the South Vernon Oil Co.

"They hold production and eliminate evaporation loss," writes James O'Neil Bruen, Sedan, Kas., producer, in describing the behavior of his Perfection battery. Well might Mr. Bruen "brag" about his tanks. For on August 3, he filled one of the tanks. On September 8, it gauged exactly the same.

"Under the same kind of weather conditions with our old wooden tanks we would have lost at least 20 inches shrinkage by evaporations," he concludes.

Merry Sunshine Back on the Job Again

HOT Sizzling sunshine in which evaporation thrives best is now upon us again.

What this dread thief will do to your oil in ordinary tanks, is a plenty!

Some of our hundreds of customers have told us that evaporation has taken as high as 20 inches of oil from an open tank with financial loss from the entire lease that would amount to thousands of dollars.

Have you ever figured that in these days of close estimates to make both ends meet that the saving effected by Perfection Vapor Pressure tanks might be the difference between profit and loss?

No one disputes that Perfection Vapor Pressure tanks are the best guardians against evaporation. We only ask that you get in touch with one of our customers in your field. We know he will give them his unqualified approval, stating that they are one of his biggest single sources of income.

To give you and other individual quick intimate service, we maintain a branch office in your field. It will pay you to get in touch with our branch manager today.

Black Sivalls & Bryson
INC.

BARTLESVILLE ~ OKLAHOMA

Branch offices in all principal active fields

North Louisiana-Arkansas

By M. L. Vaughn

Increase of 28,000 bbls. in deep sand development. Operators making efforts to store production to wait for restoration of normal prices. Smaller pipe line companies reported offering premiums. Light oil district temporarily deserted for deep area. Slight increase in Louisiana.

SHREVEPORT, La. May 4.—Production figures from the Arkansas fields continue soaring, as the development of the deep sand area in the Smackover district continues. An increase of 28,000 bbls. a day resulted from the deep sand development during the past week, bringing the total daily average production of the Arkansas Field up to 407,600 bbls.

Despite the unprecedented amount of oil now being produced in the Smackover Field, operators are making every effort to store their production, as they are confident that within 30 or 60 days the tide will recede and normal prices for their output will again prevail. Already some of the smaller pipe line companies are paying a premium to get production and contracts have been made up to 60 and 70 cents, the posted price still remaining at 40 cents a barrel.

The mad rush to the deep sand area has resulted in practically a desertion of the light oil district, and fears are entertained by the refining interests that there will soon be a deficiency of light oil for their needs. Comparatively few are taking advantage of the situation and going after the light oil, which is still bringing from $1.10 to $1.30 a barrel.

Louisiana production also shows a slight increase, a slight improvement being noted in nearly every district and the total increase from all Louisiana fields amounting to 1,308 bbls. a day. Total production from Arkansas and North Louisiana averaged 407,600 bbls. a day, distributed as follows:

Arkansas	
Smackover heavy	312,820
Smackover light	30,000
El Dorado	9,200
Nevada County	1,600
Stephens	1,900
Total	355,520

North Louisiana	
Bellevue	3,870
Caddo light	9,615
Caddo heavy	2,110
Cotton Valley	10,625
De Soto and Red River	4,225
Elm Grove	725
Haynesville	14,020
Homer	6,890
Total	52,080
Total both fields	407,600
Increase	28,678

Standard Officials on Tour

Pursuing their program of pushing the sale of Stanocola products in the southern States, a party of officials department of the Standard Oil Co. have been in Shreveport for several days on their return trip to New Orleans after touring the company's stations in Tennessee and Arkansas. Within the past two years, the company has built and purchased hundreds of service stations in Arkansas, Mississippi, Tennessee and Louisiana, and the present trip is for the purpose of reviewing the past year's work and deciding next year's policy. The party consisted of C. O. Scholder of New Orleans, vice president of the Standard Oil Co. of Louisiana, in charge of the sales department; C. Clark Bedford, son of A. C. Bedford, chairman of the board of directors of the Standard Oil Co. of New Jersey; E. L. Roy of Memphis, in charge of service stations in Tennessee and Arkansas; P. J. Miller of New Orleans, in charge of service stations in Louisiana; J. V. Gresham, of New Orleans, general manager in Louisiana; T. H. Taylor, of New Orleans, member of the board of directors and general sales manager of Louisiana, and C. L. Willis, general sales manager for Tennessee and Arkansas.

Urania Developments

The Urania district in La Salle Parish was again in the limelight for a few hours during the past week, when an offset well, drilled by George Zeigen in the immediate vicinity of the discovery well of this territory, came in flowing by heads at the rate of 125 bbls. a day. The well only flowed for a few hours, when it went dead, thus duplicating the performance of the discovery well, drilled by the Urania Petroleum Co. The well tested 5 per cent fresh water, 3 per cent b. s., one-half of 1 per cent sand and 21.6 gravity, completed at 1,512 feet.

Among the big interests which have entered the Urania territory thus evidencing their faith in it as a future producing field, is the Cunard Steamship Co., which has purchased a lease on 520 acres from Henry E. Hardtner, one of the largest land owners in this territory. The price paid for the lease was $260,000, half cash and half to be paid out of the first oil produced, the lease carrying the usual one-eighth royalty and a drilling clause calling for a well to be started prior to May 15. The acreage is checkerboarded in eight pieces, north and west of the discovery well.

A lease on Bayou Castor, in La Salle and Winn Parishes, running through the prospective Urania oil field, was purchased from the State by Earl Freeman of Baton Rouge, for $11,275, one-eighth royalty to be retained by the State.

Deep Sand Completions

The estimated production of Smackover heavy oil from the deep sand in Townships 16-15 and 15-15, Union and Ouachita counties, Arkansas, as of Friday, May 1, was 278,720 bbls. from 104 producing wells. The first sand is producing 58,000 bbls. The number of deep sand completed wells was 127 but 23 of them were "dead" on Friday.

On the same day there were 72 derricks up and 216 wells drilling for the deep sand in the two townships. Of these 67 derricks and 198 wells drilling were in Township 16-15 and five derricks up and 18 wells drilling in Township 15-15.

The field was extended northeasterly to the north half of Section 34-15-15, when the Standard Oil Co.'s No. 2 Powell was completed as a 1,000-bbl. producer.

Smackover heavy crude at 40 cents a barrel is about the cheapest useful commodity in America and there is great activity among purchasers to buy it at that and also at premium prices. Some oil was sold on Wednesday for future delivery at 70 and at 65 cents per barrel and operators have no trouble selling at the posted price of 40 cents. The Root Refineries Co., which has been taking oil from the East El Dorado Field will lay a 6-inch line to the Smackover heavy oil field from its loading rack at Herma. The line can handle 15,000 bbls. or more daily and this is taken to mean that the company will become an important factor among the purchasers in the field.

Standard Oil Co. of Louisiana has begun operations on its 100-mile line to the Mississippi River. Camps have been established along the right of way and progress is being made daily on the preliminary work of construction.

The deep sand oil wells completed the past week numbered 28 and their combined intial prdouction was 63,182 bbls. Houston and others' No. 10 Laney, SW cor. SW SE, Section 31-15-15, was drilled to 2,406 feet without a showing of oil, and was abandoned.

The other completions were as follows:

Standard Oil Co.'s No. 14 Umsted, CSL SE SE, Section 32-15-15, sand at 2,367-75 feet, flowing 5,000 bbls.

Standard Oil Co.'s No. 20 Alphin, CNL SE NE, Section 3-16-15, sand at 2,371-85 feet, flowing 3,500 bbls., 4 per cent salt water.

Natural Gas & Petroleum Corp.'s No. A-3 Hill, CWL NE SW, Section 5-16-15, sand at 2,364-68 feet, flowing 800 bbls.

Natural Gas & Petroleum Corp.'s No. E-2 Murphy, SW cor. NW NE SW, Section 9-16-15, sand at 2,460-75 feet, flowing 2,500 bbls.

Gulf Refining Co.'s No. 11 Murphy, SW cor. SE SE, Section 9-16-15, sand at 2,382-95 feet, flowed 702 bbls. the first 24 hours.

Humble Oil & Refining Co.'s No. B-3 Flenniken, NE cor. NW SW, Section 9-16-15, sand at 2,441-56 feet, flowing 2,500 bbls.

Ohio Oil Co.'s No. 7 Pate, CSL NW NE, Section 10-16-15, sand at 2,377-86 feet, flowing 7,000 bbls.

Rogers and others' No. 1 LeCroy, near SE cor. NE NE, Section 17-16-15, sand at 2,455-66 feet, flowing 2,500 bbls.

Standard Oil Co.'s No. 2 Powell, SE cor. NW, Section 34-15-15, sand at 2,369-82 feet, started at 600 bbls. from sand at 2,369-80 feet and later increased to 1,000 bbls. This is the farthest northeast producing well in the field and proves up a considerable acreage.

Standard Oil Co.'s No. 18 Alphin, C S half SE NE, Section 3-16-15, sand at 3,371-79 feet, flowing 1,800 bbls.

Mazda Oil Co.'s No. B-2 Lawton, NW cor. NE SW, Section 10-16-15, sand at 2,421-31 feet, flowing 3,000 bbls.

Lion Oil Refining Co.'s No. 5 Flenniken, CNL SW NE, Section 10-16-15, completed two months ago as a 150-bbl. well, has been deepened 4 feet with cable tools and is now flowing 8,000 bbls. from sand at 2,437-50 feet, but 30 per cent of the output is water and sediment.

Dail and others' No. 2 LeCroy, SE cor. NE, Section 17-16-15, sand at 2,482-92 feet, flowing 2,500 bbls. Natural Gas & Petroleum Corp.'s So. 7 Murphy, NE cor. SE SE, Section 8-16-15, sand at 2,505-15 feet, flowing 1,500 bbls.

Pure Oil Co.'s No. 2 Bilyew, NW cor. NE NE, Section 8-16-15, sand at 2,348-66 feet, estimated 1,000 bbls.

Leon and others' No. 4 Berg, NE cor. NW NE, Section 4-16-15, sand at 2,348-59 feet, flowing 2,000 bbls.

Marine Oil Co.'s No. 5 Hays, NW cor. NE NE, Section 4-16-15, sand at 2,348-59 feet, 1,500 bbls.

Amerada Petroleum Corp.'s No. 5 Flenniken, CSL NW SE, Section 6-16-15, sand at 2,380-89 feet, 2,500 bbls., 4 per cent water and sediment.

Roxana Petroleum Corp.'s No. 1 Bilyew, SE cor. SW NW, Section 9-16-15, sand at 2,402-15 feet, 700 bbls., 90 per cent water and sediment.

Simms Oil Co.'s No. 7 Cook, NW cor. NE, Section 16-16-15, sand at 2,462-68 feet, 600 bbls.

Gulf Refining Co.'s No. 6 LeCroy, NW cor. SE, Section 16-16-15, sand at 2,485-94 feet, 8,000 bbls.

Federal Petroleum Co. got a dry hole at 2,656 feet in No. 4 Childs, Section 8-16-16, and Smitherman & McDonald, a 40-bbl. pumper at 2,026 feet in No. 1 Hicks, Section 23-16-16, both in the Louann district.

Bailey & Trimble completed No. 3 Lawton, Section 10-16-15, flowing 1,000 bbls. at 2,433 feet.

Hickman and others completed No. 10 Graves, Section 3-16-15, flowing 4,500 bbls. at 2,377 feet.

Humble Oil & Refining Co.'s No. B-4 A. Flenniken, in Section 9-16-15, flowing 3,000 bbls. at 2,455 feet.

Murdock and others completed No. 4 Bilyew, Section 8-16-15, flowing 1,500 bbls. at 2,469 feet.

The Pure Oil Co. got a dry hole at 2,385 feet in No. 1 Dumas, CEL NW SW, Section 16-16-15, and the test was abandoned.

A. H. Ramage and others abandoned No. 7 James, SE cor. NE NW, Section 6-16-15, at 2,400 feet. It started at 400 bbls. of fluid, 90 per cent water several weeks ago.

Rogers and others completed No. 3 LeCroy, Section 17-16-15, flowing 3,000 bbls. at 2,466 feet.

The Simms Oil Co. completed No. 1 Cook, Section 16-16-15, flowing 2,000 bbls. at 2,468 feet.

El Dorado Union Oil Co.'s No. 2 Umsted, Section 4-16-15, is flowing 800 bbls. at 2,368 feet.

The Standard Oil Co. completed No. 3 R. Bennett, Section 33-15-15, flowing 1,840 bbls. at 2,360 feet.

The shallow wells were completed in the north end of the deep sand district, the Pure Oil Co. getting a 100-bbl. pumper at 2,040 feet in No. 2 Cunningham, SW cor. SE NW, Section 30-15-15, extending the field northwest and C. A. Colcord a dry hole at 2,012 feet in No 3 Laney, Section 31-15-15.

In the west end of the Norphlet district, the Cumberland Petroleum Co. completed No. 6 Reynolds, Section 23-15-17, pumping 40 bbls. at 2,302 feet; Hunt and others completed No. A-3 Myatt, Section 22-15-17, pumping 45 bbls. at 2,385 feet; McCorkle and others completed No. A-2 Smith, Section 25-15-17, pumping 20 bbls. at 2,307 feet; J. D. Reynolds abandoned No. 1 Berg, Section 13-15-17, at 2,258 feet, and got a 25-bbl. pumper at 2,300 feet in No. 5 Ward, Section 25-15-17, and The Texas Co. completed No. 7 Reynolds, Section 23-15-17, pumping 60 bbls. at 2,297 feet. Guy Freeling completed No. 3 Gibson, Section 26-15-17, pumping 20 bbls. at 2,335 feet.

Cotton Valley District

Completions in the Cotton Valley district during the past week numbered five, all pumpers with an aggregate initial production of 865 bbls.

Humble Oil & Refining Co. completed No. 5 Gray, Section 26-21-10, pumping 215 bbls. at 2,546 feet.

Louisiana Oil Refining Corp. completed No. 2 Bodcau, Section 13-21-10, pumping 175 bbls. at 2,512 feet, and No. 5 Gray, Section 28-21-10, pumping 125 bbls. at 2,584 feet.

Ohio Oil Co. completed No. 5 Gray, Section 26-21-10, pumping 220 bbls. at 2,565 feet.

Woodley Petroleum Co. completed No. 1 Gray, Section 26-21-10, pumping 130 bbls. at 2,566 feet.

Bienville Parish

Roxana Petroleum Corp. has abandoned its test on the Bryan lease in Section 30-17-6, after drilling to a depth of 3,720 feet. The well is about half way between Gibsland and Bienville.

Caddo Parish

Dixie Oil Co. completed No. 65 Robertshaw, Section 13-21-15, in the Pine Island district, pumping 25 bbls. at 2,327 feet.

The Texas Co. completed No. 10 Russell, Section 3-20-16, pumping 10 bbls. at

(Continued on Page 112)

Fires like this one cannot start when your tanks are equipped with the Wiggins Floating Roof

Your refinery, will it avoid a fire this year?

Your oil, will it be sold or burned? Pay you a profit or show a loss?

There is just one way to insure that your tanks will not be ignited by lightning, sparks or some similar cause.

That is by the installation of a Wiggins Floating Roof.

Blankets the Oil

This roof floats—actually floats—on the surface of the oil. Therefore, the oil cannot evaporate, and there is no accumulation of gas between oil and roof waiting for the merest touch of fire or extreme heat to flash into destructive action.

The Wiggins roof *blankets* the oil—and does it *before* the fire starts, not afterward.

Fire Tests Proved Safety

The fire tests we conducted some time ago showed conclusively that it would be practically impossible for lightning to ignite the oil under a Wiggins Roof. Note that in the accompanying pictures gasoline is being burned on top of the roof without igniting the gasoline upon which the roof is floating.

Proved Equipment

The performance of the roof under severe service conditions has shown its reliability. Snow, sleet, ice and rain have failed to halt the operation of the roofs in service.

Replace Wooden Roofs Now

Don't allow your wooden roofs to continue to waste your light and most valuable fractions. Replace them this season. Wire our nearest office for the latest quotations on the diameters you contemplate.

CHICAGO BRIDGE & IRON WORKS

CHICAGO	NEW YORK	DALLAS	ATLANTA	SAN FRANCISCO
2128 Old Colony Building	3147 Hudson Terminal	1641 Praetorian Building	1054 Healey Building	1054 Rialto Building

The Wiggins Floating Roof *Keeps Oil In-Keeps Fire Out and prevents corrosion under the roof*

OKLAHOMA

(Continued from Page 38)

NE cor. NW SW Section 34-16-12, is dry and abandoned at 2,320 feet.

The Superior Oil Corp. and others' No. 4 Vore, SW cor. SE SW Section 34-16-12, is dry and abandoned at 2,315 feet.

G. Dennis is drilling at 1,500 feet in No. 1, NW cor. NE Section 24-16-12. The Riverland Oil Co. has a rig up for No. 1, CEL SE SE, Section 8-16-12. This is a twin to the old gas well. Thompson & Black have completed No. 2-A, C NE NW Section 10-16-12. Sand was 1,360-1,435 feet, and the well made 50 bbls. after a shot of 100 quarts.

The Independent Oil & Gas Co. has a rig up for No. 10 Coleman, CSL NE SW NW Section 27-16-12. W. B. Pine has a rig up for No. 1 Staley, SE cor. SE Section 35-16-12. Suppes & Turner have a rig up for No. 2 Staley, CWL SW SE Section 35-16-12. Suppes & Turner have a rig on the ground for No. 3 Sraley, CSL SW SE Section 35-16-12.

The Margay Oil Co.'s No. 2 SW cor. NE Section 27-16-12, is dry and abandoned at 2,550 feet.

Beggs District

Iona Oil Co.'s No. 2, CSL SE NW Section 31-15-15, is dry and abandoned at 2,195 feet.

The Eastern Oil Co. is rigging up for No. 1 Jefferson, SE cor. NW NE Section 32-15-11.

The Meridian Oil Co. has 1,500 feet of oil in the hole in No. 1, NE cor. SE NW Section 1-15-12. Sand was 2,048-2,052 feet. McCarthy and others are drilling at 700 feet in No. 2, NW cor. SE Section 4-15-12. The Iron Mountain Oil Co. is spudding No. 1 NE cor. NW SE Section 7-15-15.

Detrick & Detrick have completed No. 7, NW cor. NE NE Section 2-14-11. Sand was 2,326-52 feet, and the well is good for 35 bbls. natural.

Okmulgee District

Smith and others are drilling at 350 feet in No. 5, NW cor. NE NE Section 23-14-14.

J. K. Leard and others have a rig on the ground for No. 1, SE cor. NW Section 21-11-9.

The Clarion Oil Co.'s No. 1, SE cor. SW Section 16-14-11, has 300 feet of oil in the hole and a show of water from sand 2,966-70 feet.

The Oklahoma Eastern Oil Co.'s No. 4, CWL SE Section 7-15-13, is spudding. The Papoose Oil Co. is drilling at 2,065 feet in No. 8, SE cor. NE SW Section 21-15-14. This is an old well drilled deeper, old total depth was 1,650 feet. Its No. 22, CWL SW SE Section 21-15-14, is drilling at 1,320 feet.

J. G. Haas and others have a machine on the ground for No. 11, CSL NW NE NW Section 15-14-14. The Pure Oil Co. is drilling at 220 feet in No. 7, CWL NW SE SW Section 16-14-14.

Atlantic Oil Producing Co. & C. L. McMahon are drilling at 1,205 feet in No. 4 Brooks, SE cor. NE SW Section 36-12-10.

The Independent Oil & Gas Co. and C. L. McMahon's No. 1, NE cor. SW SW Section 33-12-11, is good for 500 bbls. natural from sand 3,617-59 feet. C. L. McMahon and others have spudded No. 10, SE cor. NE Section 36-12-11. Their No. 3, NW cor. SW Section 31-12-12 is running 10-inch casing at 1,835 feet. The Simms Oil Co. has abandoned the rig for No. 2-A, SE cor. SW NW Section 31-12-12.

The Pulaski Oil Co.'s No. 7, SW cor. SW Section 36-12-13, is drilling at 2,660 feet. This is an old well drilled deeper.

The Iron Mountain Oil Co.'s No. 15, C NE SW Section 24-13-14, is spudded.

Wigton & Long's No. 1-A, CSL SW SW Section 3-12-14, dry and abandoned at 1,820 feet. W. B. Pine has a rig on the ground for No. 5 Hawkins, NW cor. NW Section 29-12-14. The Sterling Oil Co. is cleaning out No. 3, NE cor. NE Section 30-12-14 to drill deeper.

Tiger Flats

The Atlantic Oil Producing Co. has completed No. 2 Gray, SW cor. SE Section 36-12-10. Sand was 3,034-49 feet, and the well was shot with 20 quarts making 50 bbls.

King and others' No. 3, CEL NE SW Section 11-13-12, is drilling at 735 feet.

Detrick and others' No. 1, SW cor. NW SW Section 20-13-12, is dry and abandoned at 3,210 feet.

The Holly Oil & Gas Co. and Kistler's No. 2 Webster, NE cor. SW NW Section 33-13-12, is dry and abandoned at 3,164 feet. W. C. Newman is drilling at 1,500 feet in No. 2 NW cor. NE SE Section 33-13-12. The Aztec Oil Co. is drilling at 425 feet in No. 1, NE cor. SE Section 36-12-11. The Simms Oil Co.'s No. 3 Jordan, NW cor. SW NE, Section 31-12-12 is drilling at 740 feet. Its No. 3-A Jordan, NW cor. SW NW Section 31-12-12, and No. 1-B NW cor. SE NW Section 31-12-12, are spudded.

Cromwell Pool

The Continental Oil Co. and others are building the rig for No. 1 Williams, SE cor. SW Section 28-11-8. The Sinclair Oil & Gas Co. and Houston Oil Co. have a rig on the ground for No. 4 Hill, SW cor. SE Section 28-11-8. Waite Phillips Co. and others' No. 1 Baker, SW cor. SE NE Section 28-11-8 is drilling at 650 feet. Waite Phillips Co. has a rig on the ground for No. 1, SE cor. NW SW Section 28-11-8.

The Prairie Oil & Gas Co. is spudding No. 3, SE cor. NE SE Section 32-11-8. The Mutual Oil Co.'s No. 4 NW cor. SW SE Section 33-11-8 had the top of the sand 3,273 feet bottom 3,375 feet, and is drilling in lime at 3,432 feet with 8,000,000 feet of gas and a show of oil. It has completed No. 5 SW cor. NW SE Section 33-11-8. Sand was 3,310-3,410 feet, and the well was good for 180 bbls. natural. It was shot with 35 quarts and is making 310 bbls.

Waite Phillips Co. and the Mid-Continent Petroleum Co.'s No. 7 Brown, SE cor. NW SW Section 33-11-8, is drilling at 634 feet. Waite Phillips Co. and Mid-Continent Petroleum Co.'s No. 8 Brown, SW cor. NE SW Section 33-11-8, is drilling at 350 feet.

West of Cromwell, the Sweeney Drilling Co.'s No. 1 Key NW cor. SW NW Section 14-10-7, is dry and abandoned at 3,784 feet.

The Roxana Petroleum Corp. has spudded No. 1 Brown, SW cor. SW Section 2-10-8. The Carter Oil Co. has completed No. 4 Dunn, SE cor. SW NW Section 3-10-8. Sand was 3,365-3,452 feet, the well was shot with 30 quarts and is good for 330 bbls. The Carter Oil Co.'s No. 16 Dunn, NE cor. NW Section 3-10-8, is drilling at 635 feet. The Nowata Oil & Refining Co. is building the rig for No. 2 NW, cor. NE Section 3-10-8.

The Devonian Oil Co. has completed No. 1 Deer, NW cor. SW NE Section 8-10-8. Broken sand 3,437-54 feet; best pay 3,454-80 feet, bottom of sand. Total depth 3,495 feet. The well is making 200 bbls. daily.

The Roxana Petroleum Corp.'s No. 1-A, SE cor. NE NW Section 10-10-8, is dry and abandoned at 4,226 feet. The Houston Oil Co. has completed No. 3 Harjo, NW cor. NE SE Section 15-10-8 for 560 bbls. from sand 3,480-3,535 feet.

Papoose Pool

Jennings Brothers have completed No. 2 Barnett, SE cor. SW Section 33-10-9. Sand was 3,059-72 feet and the well made 92 bbls. oil and 10 bbls. water on the pump.

The Prairie Oil & Gas Co.'s No. 2-A Vincent, SW cor. SE SW Section 34-10-9, is completed for 840 bbls. natural from sands 3,263-86 feet; break to 3,294 feet, sand 3,294-3,311 feet. Its No. 5 Vincent, NW cor. SW SW Section 34-10-9, had broken sands 2,710-3,075 feet, with 2,000,000 feet of gas and a show of oil. Its No. 5, SE cor. NE SE Section 35-10-9, is drilling at 1,210 feet.

The Amerada Petroleum Corp., and the Gilcrease Oil Co.'s No. 3 Harjo, SE cor. SW SW Section 36-10-9, is completed for 819 bbls. from sand 3,339-79 feet.

East of the Papoose Pool, Pratt & Burton are rigging up for No. 1, SE cor. NE NE Section 15-10-10.

The Independent Oil & Gas Co.'s No. 7 Alexander, SW cor. SE NE Section 2-9-9, made 35 bbls. an hour from sand 3,314-42 feet.

The Phillips Petroleum Co.'s No. 1, SW cor. NE SE Section 3-9-9, is good for 840 bbls. natural from sand 3,314-95 feet.

North of the Papoose Pool, the Burns-Greis Oil Co. is drilling at 1,150 feet in No. 1, SE cor. SE Section 16-10-9. It is spudding No. 2, NE cor. SE SE Section 16-10-9.

J. E. Dow has a rig on the ground for No. 1, NE cor. NW Section 23-10-10.

Creek County

J. B. Grieves' No. 3 Lowe, CWL NE Section 13-19-8, is dry and abandoned at 2,537 feet. He has a rig up for No. 4 Lowe, CSL SW NE NW Section 13-19-8.

Shaffer and Markham have a rig on the ground for No. 1, SW cor. NE Section 22-19-8. The Texas Co. has a rig up for No. 30 Dale, SW cor. SE NW Section 6-18-7. It is a twin well to No. 23.

Glidden and others have completed No. 1 Robinson, SW cor. NE SW Section 14-19-10. Sand was 1,580-1,611 feet and the well shut in with 2,000,000 feet of gas. Vaughan & Wheeler are drilling at 600 feet in No. 6 Allen, NE cor. SE SW Section 27-18-10.

The Olean Petroleum Co.'s No. 4 Wills, NE cor. SW NE Section 6-16-8, is shut down at 1,040 feet.

The Red Bank Oil Co. has completed No. 1 Fixico NE cor. NW SE Section 16-16-8. Oil was 3,161-65 feet, total depth 3,175 feet. The well is good for 15 bbls. natural. The Cortez Oil Co.'s No. 6 Willson, NW cor. SE NW Section 22-16-8 had sand, 3,142-47 feet, and is swabbing 50 bbls. of oil and water.

The Laurel Oil & Gas Co. is trying to revive No. 9 Knell, C NE SW Section 22-16-8, which had sand 3,113-16 feet. The well made 100 bbls. an hour the first three hours and then stopped.

Phillips Petroleum Co.'s No. 1 Micco, NE cor. SW NW Section 32-16-8, is dry and abandoned at 4,098 feet.

Malcona Petroleum Co. and others' No. 1, NW cor. SE NW Section 6-17-9, is dry and abandoned at 2,840 feet. Wood & Farren's No. 3, NE cor. NW SE Section 21-17-9, had sand 2,509-49 feet. The well was shot with 15 quarts and is showing for a 10-bbl. well .

The Texas Co. has the rig up for No. 2, NW cor. SW Section 18-17-10. The Transcontinental Oil Co. is spudding No. 16, CEL NE SW Section 27-16-9.

Tulsa County

C. P. Minshell has spudded No. 4, C SE NW Section 21-19-11. The Riverland Oil Co. has the rig up for No. 2, CNL NE NE Section 34-19-11.

Thompson & Black have completed No. 1-A, CWL NE NW Section 24-17-12. Sand was 2,286-2,304 feet, and the well was good for 50 bbls. natural. It was shot with 15 quarts which did not increase the production. The Henry Oil Co. has completed No. 1 SW cor. SE SW Section 25-17-12, which is good for 15 bbls. after a shot of 40 quarts in sand 2,308-19 feet. Bradstreet and others' No. 1 Boling, SW cor. SW Section 27-17-12, is dry and abandoned at 3,205 feet.

The Sheldon Oil Co.'s No. 1-A, NW cor. SW Section 31-17-13, is dry and abandoned at 2,345 feet.

Thompson & Black's No. 1 CNL NW NW Section 8-16-13, had a small show in the Wilcox sand 2,141-61 feet. It was plugged back to sand 1,693-1,700 feet and is good for 10 bbls. natural.

Glidden and others' No. 1 Robinson has been completed for 2,000,000 feet of gas from sand 1,580-1,611 feet. It is located SW cor. NE SW Section 14-19-10.

Dean and others' No. 2, SW cor. NE Section 24-19-14, has been shut in for a 500,000-foot gas well from sand 1,000-1,100 feet.

Near Wewoka

The Dixie Oil Co. is drilling at 200 feet in No. 2 Liggon, NW cor. SW SE Section 25-8-7. W. R. Ramsey has completed No. 5 Salinda, SE cor. NW SE Section 31-8-8. The well is good for 600 bbls. natural from sand 3,224-40 feet.

The Prairie Oil & Gas Co. is spudding

(Continued on Page 134)

Kansas Oil Field News

By J. L. Dwyer

The interest in the Kansas oil fields was greatly stimulated by the completion of about 30 wells in Greenwood County, and 3 in the Rainbow Bend Pool. The completions of Greenwood County added about 2,000 bbls. daily to the State's production, while the completions in Rainbow Bend were too late in the week to have much effect on the State's acreage production for last week.

In Greenwood County the completed wells were scattered throughout the pools of that territory, while in the Rainbow Bend, the wells are all on the acreage of the Marland Oil Co.-Independent Oil & Gas Co.-Waite Phillips Co. block. The new completions at Rainbow bring the daily production of that pool to almost 16,000 bbls. and the field is extended a location east.

The best well to be completed is No. 3 Dora Johnson, SE cor. SE, Section 20-33-3, which had an initial production of 3,260 bbls. daily. Sand was 3,221-66 feet, and this well offsets to the west No. 1 Snyder which produced 2,264 bbls. originally. No. 3 Johnson is holding up nicely and is producing around 3,000 bbls. daily.

No. 2 Snyder NW cor. SW SW Section 21-33-3, a quarter mile north and a location east of No. 3 Johnson is drilled in but not completed. It had sand 3,216-53 feet, and made 2,618 bbls. the first 18 hours.

The same companies' No. 3 Nelson NW cor. SE NE, Section 20-33-3 made 1,903 bbls. the first 24 hours from sand 3,196-3,227 feet. It is a north offset to No. 1 Nelson, SW cor. SE NE, Section 20-33-3 which was a 1,500-bbl. well originally.

Late reports from the field advise that No. 2 Snyder is not holding up as well as No. 3 Johnson. These developments make the E half NE Section 20 look very attractive in potential production and also improves the prospects of the SW quarter of Section 21.

That the Marland-Independent-Phillips interests evidently have all the good production of the field is indicated by the failure of the Wentz Oil Co.'s well across the river to the north, C NE SE Section 17-33-3 which produced 8 bbls. from sand 3,168-3,207 feet; and the well of Marland & Slick, SE cor. NW Section 19-33-3 which made 32 bbls. from sand 3,181-3,202 feet. The Waite Phillips-Gypsy Oil Co.'s well across the river to the southwest NE cor. SW SW Section 29-33-3 is also a light well making 8 bbls. from sand 3,288-3,304 feet.

Butler County

The Bement Oil Co. has a rig on the ground for No. 1 NW cor. NE NW Section 34-23-6.

Roy Bamsby is spudding No. 1, NE cor. SE SW Section 14-24-4.

The Phillips Petroleum Co. and Vickers have a hole full of oil in No. 1 King, NW cor. NE SW Section 17-24-4. Sand was 2,537-39 feet, and the well is estimated as good for 300 bbls. Phillips Petroleum Co. and Vickers have completed No. 1 Penner, SE cor. SW Section 32-24-4 for 12 bbls. from sand 2,732-55 feet.

Vickers and others' No. 1, NW cor. NW Section 2-25-3, is estimated from 60 to 75 bbls. in sand 2,725-40 feet.

Miller & McGraw have a rig on the ground for No. 1, SE cor. SW Section 6-27-4.

The Blue Stem Oil Co. has completed No. 3 McLean, CNL SE SW Section 5-27-6. Sand was 2,718-38 feet and the well is good for 75 bbls. natural. Branson and others are drilling at 1,400 feet in No. 1, CEL SE NE Section 5-27-6.

Roth & Faurot are drilling at 840 feet in No. 5 Biskett, CWL SE NW Section 12-25-8. Polhamus and others' No.

(Continued on Page 134)

(1) A picture which speaks for itself.

(2) One of the hundreds of Moore 84-foot Standard Drillers in Venezuela.

(3) Wildcatting at Tisdale, Wyoming. Moore 84-foot Driller.

A light Pumper and a heavy Drilling derrick—"all rolled into one." That is what you have in a Moore Releg Derrick, shown below. (No. 4.) It is a Moore 74-foot Pumper with 3″ legs, capacity 73,000 lbs., fitted with an extra set of legs made of 4″ pipe. Result: 247,000 lbs. capacity, safety factor of 4, or tripled strength! The "Relegs" are used for drilling and pulling casing only, being moved from place to place for these purposes, while the derrick with single legs is used as a pumper. This system is now rapidly gaining favor in many fields where it is proving both economical and convenient. Write for full particulars.

(4) No. 11 Kukuk, at Winfield, Kansas. Moore 74-foot light steel driller reinforced with 4" re-legs, making a very economical derrick, of giant strength for drilling.

LEE C. MOORE & CO., Inc., Pittsburgh, Pa.

Established 1907

CASPER, WYO. Midwest Building — DALLAS TEX. Magnolia Building — SHREVEPORT, LA. 824 Prospect Avenue

TULSA, OKLA. Atlas Life Building

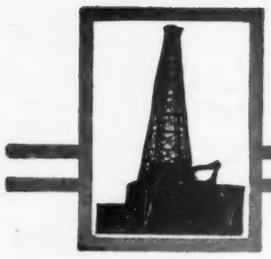
PARKERSBURG, W. VA.—Union Trust Building

California Representatives—**BUCK & STODDARD**

SAN FRANCISCO—485 California Street

LOS ANGELES—3354 E. Slauson Ave.; Box 720 Arcade Station

MOORE TUBULAR STEEL DERRICKS



Southwest Texas Fields

By Staff Correspondent

United North & South Oil Co.'s well which was pronounced dry and a failure rated as good for 1,000 bbls. when drilled deeper. As a result, may deepen the one other well listed as failure. Many locations made as plenty of water now available for drilling. Good well south of Jim Hogg County Pool.

SAN ANTONIO, Tex., May 4.—United North & South Oil Co.'s No. 1 F. A. Gomillion in the Lockhart Field of Caldwell County, which two weeks ago was pronounced dry and a failure so far as the Serpentine formation at the regular horizon of the field above the Austin chalk was concerned, was drilled through the Austin chalk and at 1,737 feet is a 1,000-bbl. well and producing from the Serpentine. The well is the farthest north of any of the producers and now there is a probability that the tools may be sent back into the Mike Danley well, 1 mile to the south in the hope of deepening it into a producer.

Not only is the North & South's Gomillion well a producer but the Gulf's No. 3 C. Beaty, which it was feared was about to indicate a limit on the field at the west is in and is making 300 to 400 bbls., having made the first day around 500 bbls. With the exception of the Danley well on the south which was definitely abandoned and casing pulled and the well plugged when it failed to get enough oil for a commercial well at around 1,350 feet, the field is without dry holes and has close to 30 producers. The record time in completing a well thus far is 68 hours. Water is available in abundance at this time for drilling and wells are being completed rapidly with the probability that the number of producers will be greatly increased this week.

Sand Depth Varies

While the North & South well is a producer it has added to the chaotic nature of the information on the field for the Cranfil & Reynolds-Marland Oil Co.'s No. 4 F. A. Gomillion, an offset on the west 300 feet has found the Serpentine at about the average depth of the wells in the field at 1,320 feet and carrying some oil. North & South got very little Serpentine at that depth and found it dry. With the exception of the North & South well none of the producers has reached the Austin chalk. North & South passed through a limy formation that until more positively identified is being called Austin chalk.

Geologists studying the field say that there are no two wells in the field producing from the same depth nor producing the same amount. This is nearly true. Three wells of the Gulf Production Co. on the C. Beatty tract and which are at the western limits of the field are flowing a total of about 800 bbls. a day. They are just west of the 30-acre Brewer tract on which Lefevre & Storey brought in the discovery well and one of the three offsets the discovery well now owned by Witherspoon Oil Co. This discovery well was deepened and is on the pump and making 100 bbls. daily.

Gets Good Showing

Grayburg Oil Co. is in the sand and setting casing with a showing of oil that indicates it will be a well in the No. 1 C. Beaty one-fourth mile west of the nearest prdouction and Humble is drilling an offset to it. Humble Oil & Refining Co., on the Mrs. M. L. Brewer 64-acre lease which, with the United North & South a producer, is nearly surrounded by production and has three wells in process of completion and several others drilling.

Gulf Production Co.'s Nos. 1, 2 and 3 C. Beaty are production. Its Nos. 1 and 2 Gomillion and 1 and 2 M. L. Brewer are being completed, all having found the pay, and they are drilling on the No. 3 F. A. Gomillion No. 5 C. Beaty and No. 1 on the 56-acre M. L. Brewer tract. Sun Oil Co. is drilling its No. 12 A. H. Gomillion in the southwest corner of its lease and which is an offset to Gulf's No. 5 C. Beaty. Cranfil & Reynolds-Marland Oil Co. have completed the No. 1 F. A. Gomillion, and are drilling on Nos. 2, 3, 4, and 5. No 4 which offsets the North & South's big well has found the pay but there is a possibility that it may be drilled deeper to get bigger production if possible at the depth of the North & South.

Operaters are pushing their drilling as rapidly as possible in the big production wherever possible. This is the case of the Humble Oil & Refining Co., which was delayed for a time for lack of water but has made 18 locations, which entirely surround its M. L. Brewer 64-acre tract and has several wells drilling and will probably have the entire 18 drilled within another week or ten days.

Mills Bennett, who bought the McClannahan & Crouch 36-acre Brewer lease, has two wells drilling and nearly ready for completion. Lucey Drilling Co., offsetting the Bennett lease on the south and drilling on a Marland 28-acre Palmer lease, has completed the No.1 making 1,200 bbls. daily at about 1,320 feet. It is the farthest east of any producer. Quaker Oil Co.'s No. 1 Palmer is a well. It offsets the No. 1 Brewer well of Mills Bennett on the south.

Outside Drilling

The above covers the inside or close in drilling in the field. Kampman & Golding in the southwest corner of the west 25 acres of the east 50 acres of the Mrs. H. E. Palmer 100-acre tract north of the North & South F. A. Gomillion lease is drilling and from depths reported last should be in the pay sand by this time. It is the farthest north of any drilling well and is one-fourth mile north of the North & South's No. 1 Gomillion, which came in making 2,000 bbls.

With the possibility of one lease which it may drill itself the Marland Oil Co. is farming out its leases in the field, on a 50-50 basis, for the reason, according to reports, that it has developed no producing organization in Texas. Joe Walsh on the Marland lease out of the Eppright tract one-fourth mile east of the nearest producer, E. L. Smith on the Marland's E. T. Lackey lease, one-half mile south of the nearest producer and Cranfil & Jones on the Marland's Tabor estate lease, over 1 mile southwest of the nearest producer, all spudded in a few days ago.

Armstrongs are drilling on the W. H. Riddle tract nearly 1 mile south of the field and Randolph has spudded in on the C. Beatty and Cope on the C. Beaty between Armstrong and the field. Armstrong is moving in a rig on the Smith tract south of the Katy railroad tracks and a little east of Lockhart 7 miles from the field.

Three Rivers District

Texas Pacific Coal & Oil Co. and Plateau Oil Co. are testing out a sand at 2,640 feet, 1 mile west of their two big gas wells in the southern part of Live Oak County, which may prove a second gas sand. They are in the sand in No. 1 D. B. Miller. No. 2 Freeman and No. 1 Collins are producing gas from a sand topped at about 2,385 feet. The same sand was found in No. 1 D. B. Miller, but passed up at the time in expectation of finding the second sand, which they are now testing out.

Texas Pacific Coal & Oil Co., in No. 5 Lark, in McMullen County, north of the Frio River and just north of the Calliham shallow oil field, which produces at a depth of about 750 feet, has a showing of oil at a depth of 1,050 feet on a lease belonging to the Lightfoot Oil Co. A sand tested a week ago at 1,000 feet got salt water. At 1,050 feet there is a possibliity that it will make an oil well.

San Balt Petroleum Co.'s No. 2 Shiner, in McMullen County, drilled with the expectation of picking up a producing oil sand at 1,500 feet passed up in No. 1, which was a deep test, is dry at 1,515 feet and a failure. Down to 1,350 feet the log was identical with No. 1. From that on it was entirely different. Operators believe they drilled through the fault plane at that depth and are skidding the rig 300 feet southwest of No. 1 and will start a new hole.

D. C. & M. C. Syndicate's No. 6 Lowe, in McMullen County, tested at 410 feet, is most too small for a commercial producer. A. W. Kollatt's No. 1 Joe Mahoney, tested at 1,750 feet, got sulphur water. Darden & Stephens' No. 4 Fouch, south of the Calliham Field, at 817 feet is a failure. Glasco & Fallin, a mile west of Three Rivers, are skidding the rig to make an offset to the gas well they have completed on the Charles R. Tips farm at 660 feet. Two miles northwest of them a rig is being moved back onto No. 1 Nichols, drilled by Foltz and others, which stopped at 800 feet on a rock. It will be deepened in the hope of getting the gas sand found in No. 1 Tips.

The Texas Co.'s No. 3 Reagan, a deep test north of Oakville, in Live Oak County, has shut down after spudding in in order to lay a water line. The Texas Co. was making formation tests and brought in a gasser good for several million feet in No. 2 Reagan. Old Ocean Oil Co., in the Calliham Field, has set casing at 817 feet and is to drill in today.

May Extend Gas Field

Houston Oil Co.'s No. 9 Cartwright, more than a mile west and north of its No. 7, nearest producing gas well and biggest gas well in the field, is drilling at 500 feet. No. 7 is nearly a mile west of the next nearest producer. The gas field will be proven up for more than 2 miles if No. 9 is a producer. No. 8 towards the south of the first producers drilled tested for shallow gas, but failed to get production and is drilling deeper, expecting to get it at around 2,000 feet. the depth of other producers. Rig for No. 10 is being set up in the river bed, not far from No. 8.

Pickett, who tested No. 1 James at 1,130 feet in northern Live Oak County and failed to get production, is skidding the derrick and rig to No. 3 Newlson.

In Atascosa County, just north of Live Oak and McMullen Counties, Halloran & Gilliam, Tampico operators, have set 10-inch casing at 550 feet in No. 1 Peeler, southwest of Campbellton and near the McMullen County line, and DeLange, Eiser & Co., after recovering 3,900 feet of drill stem in No. 2 C. T. Tom, southeast of Campbellton, have set packer and cemented to test out three 6-foot gas sands found at 3,779, 3,820 and 3,866 feet. Bottom of the hole when drill stem was twisted off was 4,650 feet. They expected to begin bailing today.

Mirando District

Henne, Winch & Fariss, discoverers of the Jim Hogg County Pool of the Mirando Field, have completed a well estimated at 2,000 bbls. on Lot 13 of Survey 256 of the Martinez tract, practically a mile south of the pool and believed by some to be an extension of the pool and by some to be a new pool. The well topped the sand at 2,026 feet, practically the depth of the wells in the pool 1 mile north. There are no dry holes between the well and the field. The well came in April 29 and was turned into the 2-inch water line run from the pool and is flowing through this 2-inch line up to the old pool, where connection was made with the Texpan pipeline to Mirando City. It is only 600 feet west of the dry hole on the Vela tract, drilled by C. E. Lange.

Burton's No. 1 De la Garza, in the southeast corner of Section 21 of Survey 335 and north of the Carolina-Texas gas well, in Webb County, which recently came in a gasser for close to 20,000,000 feet, is making a little oil, about 2 or 3 gallons a day. Other gas wells in that vicinity are all making a little wet gas. Carolina-Texas has five gas wells there and Morgan-Gibble two. They make quite a little casinghead gasoline. The Burton well is making 22 gravity oil and though the amount is small it is considered of considerable significance, in that operators have been expecting an oil field to be found somewhere in the edge of the gas area. The Burton well is also making considerable water with the gas and oil.

More Serpentine Found

Now that Serpentine is producing in the Lockhart Field it is being identified in the logs of other wells. The Hadley & Harmon-Continental Oil Co., in Zavala County, on the Pryor ranch, which found Serpentine of chlorite at 1,637 feet, has gone through the formation and is setting 10-inch casing at 2,000 feet.

California-Medina, in the western part of Medina County, in No. 1 Emma Rothe, is reported attempting to shut off water getting a showing of oil at 3,100 feet. The well is a mystery well, little reliable information coming from it. Lampasas-Bisbee's No. 1 Haeglin, in Medina County, south of Hondo, is drilling at 1,500 feet after testing out at 1,300 feet. It is believed to be in a fault. Ina Oil Co.'s No. 4, on the P. E. Durst Survey No. 15, pumped 75 bbls. in two days after being cleaned out and completed at 950 feet. Arnett Oil Co.'s No. 2 Nixon, south of Ina Oil Co.'s well, is drilling at around 850 feet. Carson & Smith have moved in a rig and have spudded in No. 1 Wilson, in the southwest corner of the Durst Survey. Kiefer Drilling Co. is moving in a rig on the Jacob Huff Survey, farther south on Hondo Creek, and is nearly ready to spud in.

Mid-Kansas, the only major interest drilling in Medina County, is 100 feet in the Edwards lime and dry at 1,607 feet in No. 1 Jacob Haby.

Wilson County

C. E. Mahone is drilling at 1,000 feet, with a small showing of gas, in No. 1 Green and others, west of Floresville, in Wilson County. Clarence Garrett's No. 1 Houck is attempting to take a core at 1,395 feet in what appears to be igneous. Douglas & Thomas' No. 1 Joe Kotsur is setting casing.

Somerset Shallow Field

Johnson Brothers have completed the No. 6 Ed Wells in the Somerset shallow field in the southwest extension in Atascosa County and it promises to make the biggest well ever completed in the field for the initial flow. After being brought in it made five heads with a total of 80 bbls. in a half day. No. 2 Wells-Touchstone of the same company and a little farther west in the field, has held the

(Continued on Page 136)

Designers and Manufacturers of Quality Oil Well Equipment

Two More Regan Products that Cut Costs

Regan Collapsible Die

THIS is a very effective tool for use in fishing for a string of pipe lost in the hole and can be used instead of a regular die collar. The advantage of this tool over the ordinary die collar is that it is constructed to allow the catching slip to collapse inwardly, thus giving a more powerful hold on the fish, which is essential in the case of catching a hardened tool joint on which a thread cannot be cut. Request full information.

Regan Expansion Taps

These are used for fishing for a string of drill pipe lost in the hole and are used instead of die nipples. The catching slip and mandrel are so constructed as to allow for the expansion of the slip. This gives positive hold on the fish, which is extremely essential in the case of catching hardened tool joints in which a thread cannot be cut. Full description and specifications upon request.

These products are produced in various sizes.
We manufacture a very extensive line of well tools.
Specification sheets upon request

Regan

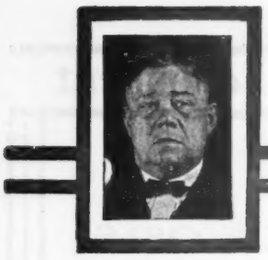
Forge & Engineering Co.

Quality - Wrought on the Forge of Experience

San Pedro California

New York Office Woolworth Building, 233 Broadway
Wm. Braat, Manager
New York Cable Address: "Braat"
A. B. C. Code; 5th Edition; 5th Edition Improved; 6th Edition

Los Angeles Cable Address: "Reganforge"
Western Union Five Letter Code



Gulf Coast Oil Operations

By P. L. McGreal

Increasing salt water encroachment in South Liberty Pool. Air compressors increase output to 17,000 bbls. but it declines to 15,300 bbls. later in week. Gain there and in Big Creek Pool through recovery of Gulf Production Co.'s No. 19 Davis but declines in Hull and other pools. Torsional balance leases.

HOUSTON, Tex., May 4.—Increasing percentages of salt water is having a chilling effect upon operators in the South Liberty Pool and a number of locations have been abandoned. Since January 1, when the pool was opened, work has been largely confined to the northeast side of the dome, with one well that extended the area one-half mile south. The territory between is now being drilled up, but the results are not as satisfactory as anticipated. Smaller wells than those in and around the original group on the northeast flank are the rule.

Interest there now centers in the following tests, which are outside of the developed zone and are therefore being watched. No. 1 Condict, of the Sinclair Oil & Gas Co., located about 2,000 feet south of production, is fishing at 3,125 feet. No. 1 Baldwin, being drilled by Mrs. Neils Esperson 600 feet east of production, is drilling below 3,800 feet, or from 300 to 400 feet below where the sand is found on the northeast side. The Humble Oil & Refining Co. has stepped out 1,800 feet northeast of production with its No. 1 Mitchell, drilling around 2,800 feet. The Brownie Babbittee Oil Co.'s No. 1 is 1,850 feet from production in the same general direction as the Humble Co.'s test. The Associated Oil Co. followed the example of the Sinclair Oil & Gas Co. in getting away from the groups and is drilling No. 1 Deussen as an offset to No. 1 Condict at 3,176 feet. The increase of further operations in the pool depends upon the success or failure of these tests and rigs are being stored until they are completed.

The following status of recent completions will serve to illustrate the encroachments of salt water on the northeast flank and to the south. The Gulf Production Co.'s No. 1 Williams, originally reported as a 500-bbl. well at 3,550 feet, is now making all salt water. No. 2 Williams is flowing 500 bbls., 20 per cent salt water, at 3,600 feet. The Oxford-Navarro Oil Co.'s joint No. 4 Harrison dropped from 800 to 500 bbls. at 3,515 feet. Same interests' No. 5 Harrison is a salt water well at 3,560 feet. The Humble Oil & Refining Co.'s Nos. 1-B Pickett and 2 Harrison-Pickett are both being put on air compressors at 2,600 and 3,580 feet respectively. The Monarch Oil & Refining Co.'s (Peer Oil) No. 2 Harrison, which had quit flowing, is back making 500 bbls. with a 2½-inch liner set.

South Liberty Completions

Completions this week in the pool include the Humble Oil & Refining Co.'s No. 3-B Pickett, making 600 bbls. at 3,650 feet and No. 1-C Pickett making 400 bbls. at 3,540 feet. Its No. 1 Schade is flowing 300 bbls. at 3,690 feet, 22 gravity. The Sun Oil Co.'s No. 2 Schade is flowing 300 bbls. at 3,556 feet and No. 3 Schade 1,200 bbls. at 3,610 feet. The Gulf Production Co.'s No. 1 Schade is making 1,200 bbls. at 3,650 feet and No. 3 Schade 1,200 bbls. at 3,520 feet. The Vacuum Oil Co.'s No. 6 Barrett is flowing 800 bbls. at 3,540 feet and No. 7 Barrett 1,200 bbls. at 3,540 feet. The Oxford-Navarro Oil Co.'s No. 6 Harrison is bailing at 3,500 feet, as is No. 8 Harrison at 3,640 feet. The Winifree Oil Co. worked over No. 1 Pickett into a well flowing 425 bbls. by heads at 3,475 feet.

A number of the producers are being flowed with air compressors, increasing the output. As a result of this and recent completions the daily average gross production ran up to 17,000 bbls. for 24 hours early in the week, but gradually declined until at the close of the week the daily average for the pool is 15,300 bbls.

The gross output of the Hull Pool is off from last week. The Humble Oil & Refining Co.'s No. 1 Merchant, which early last week was restored to production at 5,000 bbls. per day, later made 10,000 bbls. of fluid, 50 per cent water and then suddenly quit flowing. It is now on the air compressor making 600 bbls. per day, 12 per cent sediment and water.

Coastal Completions

The completions in the Coastal Pools during the week total 23, of which 3 were dry and 2 salt water. The new production aggregates 9,445 bbls., of which 6,500 bbls. came from the South Liberty district and 2,250 bbls. from the Big Bend Pool in Fort Bend County. Eight wells are bailing.

The Big Creek production is due to the recovery of the Gulf Production Co.'s No. 19 Davis, which blew in at 3,250 feet three weeks ago and showed for a 5,000-bbl. well before it sanded. The hole was cleared and it came back flowing 2,000 bbls. The Gulf Co.'s No. 18 Davis will make a 200-bbl. pumper at 3,320 feet. No. 20 Davis is drilling around 2,745 feet. Snowden & McSweeney are interested with the Gulf Co. in the Big Creek holdings. The Texas Co. is drilling No. 1 Lingua there at 4,355 feet.

Completions in the other pools were ordinary wells, smaller than the usual run of flush producers, if anything.

But few new wells have been started in any of the pools since crude prices were cut March 13 to $1.75 for grade A and $1.50 for grade B. In the Orange Pool, the Gulf Production Co. is starting two tests in the deep sand section on the southeast side and the Kishi Development Co. has made a location for No. 6 McGuire on the east side of Cow Bayou. Some unusually deep holes are now drilling there. The Sun Oil Co.'s No. 3 Brown is below 4,500 feet and the Rycade Petroleum Corp.'s No. 5-A State land is around 4,500 feet. The Gulf Co. is deepening No. 4-A Chesson at 4,785 feet and the Humble Oil & Refining Co.'s No. 21-B Chesson is around 5,400 feet.

A check-up of nine wells in the Lockhart Field on Friday morning showed 1,980 bbls. for the total, as follows:

Company and lease—	No. Wells	Gross Bbls.
Marland & Crandall, Gomillion	2	900
Marland Oil, Lucy Palmer	1	180
Gulf Production, Beaty	3	420
Gulf Production, Gomillion	1	110
United North & South, Gomillion	1	260
Witherspoon Oil, Brewer	1	120
Total	9	1,980

Daily Acreage Gross Production

The estimated daily average gross production for the Coastal Pools is placed at 101,068 bbls. for the week ending May 2, against 101,838 bbls. last week. The increase in the South Liberty and Big Creek Pools was offset by declines in other pools, notably in the Hull Pool.

The estimate for the Southwest Fields for the same period is 43,665 bbls. Producers in the Jim Hogg County Field declined, coupled with the collapse of producers in the Lockhart Field accounts for the decrease.

The daily average in each district for the week is as follows:

District—	Gross Bbls.
Batson	1,485
Blue Ridge	1,375
Barber	115
Big Creek	1,085
Dayton	43
Damon Mound	1,140
Edgerly (La.)	750
Goose Creek	9,200
Humble	4,750
Hull	24,850
Jennings (La.)	1,040
Markham	90
Lockport (La.)	218
Orange	13,600
Pierce Junction	630
Spindletop	1,245
Saratoga	1,665
Sour Lake	4,275
South Liberty	15,300
Vinton (La.)	5,857
West Columbia	12,155
Welsh-Anse La Bute	80
Miscellaneous	130
Total	101,068
Southwest Fields	
Luling	28,900
Laredo districts	4,210
Somerset	2,620
Callihan	295
Rockdale-Minerva	440
Jim Hogg County	4,800
Lockhart	2,400
Total	43,665
Grand total for week	144,733
Grand total last week	147,313
Decrease	2,580

Operations in the Pools

In the Goose Creek Pool, the Gulf Production Co.'s No. 24 Beaumont Petroleum in the bay is pumping 100 bbls. at 2,750 feet. The Sun Oil Co.'s No. 3 Wright, worked over, at 2,540 feet, will make a pumper. The Southern Exploration Co.'s No. 11 Wright is bailing at 1,900 feet.

The Humble Oil & Refining Co.'s No. 60 Smith is drilling below 4,050 feet and a liner is being set in No. 62 Smith at 2,000 feet, while No. 61 is fishing. The Gulf Production Co.'s No. 16 Busch is deepening. No. 16-A Wright is drilling at 2,545 feet, and No. 9 Chapman-Bryan at 3,923 feet. No. 17 Galliard fee is at 3,834 feet and No. 33 State land in the bay at 655 feet. The Gulf Coast-United Central Oil Co.'s joint No. 6 Galliard is working over and the Norman Bruce Petroleum Co.'s No. 1 Scorrgea, northwest of production, sidetracking at 3,010 feet.

In the Orange Pool, the Orange Petroleum Co.'s No. 11 Winifree was abandonde.

In addition to the tests mentioned as drilling in that pool, the Brownie Babbitte Oil Co., is working over No. 1 McLean. The Tullery Oil Co. is deepening No. 1 State land at 3,965 feet. The Supreme Oil Co. is deepening No. 1 Jackson, and the Edgerly Petroleum Co.'s No. 5 Carbello is below 2,415 feet with No. 1 Cormier at 700 feet. The Atlantic Oil Producing Co.'s No. 1 Hager is working over. The Sinclair Oil & Gas Co.'s No. 2 Granger is fishing. The Monarch Oil & Refining Co.'s No. 5 Galliere is drilling around 3,312 feet. On the Chesson lease, the Mutual Oil Co.'s No. 4 is sidetracking at 2,476 feet, No. 12 is working over and No. 14 is drilling around 2,990 feet. The Orange Petroleum Co.'s No. 9 Chesson is at 2,765 feet. The Humble Oil & Refining Co.'s No. 15-A Chesson is at 3,177 feet, and No. 11 Winifree is milling at 4,115 feet. The Sun Oil Co.'s No. 6 Gunstream is below 4,800 feet.

Hull Pool

On the 800-acre Dolbear lease in the Hull Pool, operated jointly by the Republic Production and the Houston Oil Co.'s, No. 111 is pumping 150 bbls. at 2,360 feet and No. 112 is making 250 bbls. at 1,680 feet. No. 113 shows oil in a sand at 2,810 feet and No. 114 is bailing at 2,420 feet. The Dolbear lease is producing about 7,000 bbls. per day, or nearly one-third of the total output of the district. To the southeast, the Gulf Production Co.'s No. 49 Phoenix is bailing at 3,050 feet, as is No. 51 Phoenix at 2,800 feet. The Gulf Co.'s No. 17 Hannah, on the west side of the dome bailed dry at 2,380 feet. The Yount-Lee Oil Co. abandoned No. 5 Stengler, on the north side at 3,200 feet. The Humble Oil & Refining Co.'s No. 7 Guidry a worked-over hole, is bailing at 3,200 feet.

The Republic-Houston Oil Co.'s No. 115 Dolbear, is fishing and No. 116 is drilling at 2,135 feet with a derrick up for No. 117. The Gulf Co.'s No. 50 Phoenix, is drilling at 3,370 feet. No. 52 Phoenix is rigging. No. 13 Baldwin is at 3,120 feet. No. 20 Morris-Phillips is drilling at 3,800 feet. J. K. Seale is rigging No. 2 Barrow. The Humble Oil & Refining Co.'s No. 2 Merchant is preparing to test at 4,150 feet. No. 2 Hannah is at 4,290 feet. The Texas Co.'s No. 3 Hannah Fee is at 3,135 feet with a derrick up for No. 4 and The Texas-Vacuum Co.'s joint No. 4 Hannah is at 3,135 feet with a derrick for No. 5.

The Yount-Lee Oil Co.'s No. 11 Merchant is at 3,076 feet and No. 12 Merchant is below 2,810 feet. The Houston Production Co.'s No. 9 Taylor is rigging. The Mecom Oil Co.'s No. 8 Taylor is around 3,500 feet. The Eagle Point Oil Co.'s No. 4 Wheelock is below 800 feet. The Higgins Oil & Fuel Co.'s No. 6 Taylor is at 3,920 feet, showing oil and gas.

South Liberty Drilling Wells

The condition of wells drilling in the South Liberty Pool at the close of the week follow: The Bashara Oil Co.'s No. 3, 4 and 5 Pickett rigging up. Mills Bennett's No. 9 Pickett drilling at 3,500 feet; No. 10, 1,500 feet; No. 11, 2,400 feet; No. 2 R. and B., 3,840 feet; No. 2 Harrison, fishing 3,540 feet; No. 3, drilling 3,450 feet; No. 4, derrick. The Gulf Production Co.'s No. 1 Antonio, drilling 3,250 feet; No. 1 Deussen Fee "A", 3,200 feet; No. 3 Harrison, rigging up; No. 2 Orgain, drilling 3,560 feet; No. 1 Richardson, 2,300 feet; No. 2, 1,500 feet; No. 3, 1,600 feet; No. 4, derrick; No. 3 Schade, washing at 3,530 feet; No. 4, drilling 3,550 feet; No. 5, 3,450 feet; No. 6, 2,500 feet; No. 7, 2,300 feet; No. 8, rigging up; No. 3 Williams, drilling 200 feet; No. 4, 3,550 feet. Hoffer Oil Co.'s No. 1 Pickett, changing rigs; No. 2, shut down; No. 3, waiting on rig. Humble Oil & Refining Co.'s No. 3-A Chambers, drilling 2,900 feet; No. 4, 2,850 feet; No. 5, rigging up; No. 2-B Chambers, drilling 3,660 feet; No. 3, 3,640 feet; No. 1 Hanszen, 3,675 feet; No. 2 Pickett "A" showing oil 3,405 feet; No. 3 Pickett "B", drilling 3,640 feet; No. 4, 2,600 feet; No. 5, 1,150 feet; No. 3-C Pickett, 3,950 feet; No. 4, 1,150 feet; No. 5, 2,300 feet; No. 6, rigging up; No. 2 Schade, drilling 3,600 feet; No. 3, derrick; No. 4, drilling 2,510 feet; No. 5, 1,450 feet; No. 6, rigging up. F. M. Long's No. 2 Andrews, drilling 450 feet. Oxford and Navarro Oil Co.'s No. 7 Harrison, drilling 3,600 feet; No. 8, bailing 3,640 feet; Nos. 9 and 10, rigging up. The Peer Oil Corp.'s No. 3 Harrison, drilling 2,750 feet; No. 6, 3,190 feet; No. 5, 3,050 feet. The Sun Oil Co.'s No. 4 Schade, 3,677 feet; No. 5, 3,565 feet; No. 6, around 2,765 feet; No. 9, 2,987 feet and No. 10, 1,785 feet. A location has been made for No. 8. The Texas Co.'s No. 2, Staiti, is at 3,367 feet, with a derrick standing for No. 3. Its No. 1 Simms fee, is at 3,406 feet; No. 2 below 3,100 feet; No. 3 around 2,565 feet and No. 4 at 1,900 feet. The

(Continued on Page 133)

SIGMA STEEL

X-Rayed for Uniformity

IN developing Sigma Steel Walworth discarded all the old routine tests and chose the most searching of all—the X-Ray. No defect or flaw in the metal can escape it. In the X-Ray room of the Watertown Arsenal every pocket, cavity and inclusion in the experimental steel fittings under examination was brought to light, corrected and eliminated.

After months of experiments a steel of exceptional uniformity has been developed—"Walworth Sigma"—simple in composition, but of such integrity that high pressures and high temperatures have found no weakness in it.

Every fitting and valve of this steel bears the same characteristic mark—the Walworth "W" combined with the Greek "Sigma." It is your assurance of a new margin of safety in the control of fluids under hazardous extremes of temperature and pressure.

WALWORTH MANUFACTURING CO., Boston, Mass.

Buffalo Chicago Cleveland Erie Glasgow Kewanee, Ill. London
New York Philadelphia Portland Seattle San Francisco Youngstown

Plants at Boston and Kewanee
Walworth International Co., New York, Foreign Representative

WALWORTH

"WHATEVER YOU BUILD, YOU NEED WALWORTH"

Valves, Fittings and Tools for
Steam, Water, Gas, Oil and Air

Rocky Mountain Area

By F. B. Taylor

Riverside district, Central Wyoming, to become active. Operations east of Teapot Dome attracting attention. Deep tests in Big Piney and Dallas Fields. Fort Collins, Colo., operations making progress. Sunburst Field, Montana, reports 4,000-bbl. gusher. Wildcat starting near Glenrock, Wyo.

CASPER, Wyo., May 2.—The Riverton district is expected to become active in the central Wyoming area shortly. The Union Oil Co. of California is surveying a pipe line route from the Maverick Springs Field in Fremont County to Riverton and also has unloaded lumber and supplies for new drilling operations at Circle Ridge Dome, a few miles from the Maverick Springs Field.

The Union of California started a well on the Circle Ridge over a year ago that proved the structure to be a black oil area, but as the Union had no outlet for its wells in the Maverick Springs, it did nothing further. Now with the black oil apparently coming into greater demand in this region, the Union is getting ready to move its black oil production in Maverick Springs and also develop its Circle Ridge property.

Some conjecture is heard as to why the Union's line was not laid to Shoshoni instead of Riverton as Shoshoni would give a better route and also give an outlet on two rail lines instead of the one at Riverton, while the distance to either point is about the same. It is considered the possibility of a Producers & Refiners line from the Lost Soldier to Riverton may have had some weight in swinging the pipe line to Riverton.

The Mack Oil Co. drilling on the Sheldon Dome north of Riverton is close to 3,000 feet in depth and the well is making about 7,000,000 feet of gas daily from the Frontier sands already drilled through. It should find two more sands that may hold production in the Frontier series.

The Sage Creek structure north of Lander is attracting attention. The Ohio Oil Co. drilled a well on this structure several years ago and found some oil, but due to a flaw in the land titles, the Ohio plugged and abandoned the well and nothing has been done since. The structure is on the same anticline as the Dallas and Derby fields and is considered to have the same possibilities of production from the Embar and Tensleep sands. The lands are held by Lander people and an effort is under way to have a well drilled there this season.

East of Teapot Dome

The Burke Syndicate operations on the east side of the Mammoth Oil Co.'s leases on Teapot Dome, are attracting attention. The Burke Syndicate obtained several tracts along the east side of the Teapot Dome reserve and started three wells which were never completed. One of these wells found oil in the Shannon sand and a few weeks ago, a string of tubing and rods were placed in this well and a test made of the production. The well made 750 bbls. in three weeks from a depth of about 800 feet and the prospects look favorable for the opening of a shallow sand pool on the east side of Teapot.

On the east side of Teapot the stratum dips at an angle of about 10 degrees, while on the west side, the dip is much sharper, being about 22 degrees. The faulting of the Teapot structure would tend to trap any petroleum that the Shannon sand may contain in pools on the east slope and as to the erosion has not cut down to this sand, the probabilities are good for a development there.

A wildcat well is being started on the ranch of former Governor Robert Carey, east of Glenrock about 10 miles, in Converse County. The work is being financed by people in Casper and the well will start in the upper Cretaceous formation and is expected to be drilled through all formations to the Madison lime.

The Utah Oil & Refining Co. has started a fourth well on the Black Mountain structure about 30 miles east of Thermopolis in Hot Springs County. The company has three wells on that structure at present, capable of making a black oil production, but there is no pipe line outlet. On the Lake Creek Dome, northeast of Thermopolis, the Union Oil Co. of California is drilling at 1,800 feet on the wildcat test of this structure.

The Casper Syndicate's well just outside the city limits of Casper, is shut down waiting on a string of 6⅝-inch casing which is expected shortly. The hole is at 3,200 feet and in shale.

Deep Test in Big Piney

In the La Barge Field or Big Piney as it is sometimes called, in Lincoln County in the southwest corner of Wyoming, the Midwest well drilling for the Utah Oil & Refining Co., is down 3,160 feet with the objective sand expected at 3,500 feet. This is the first deep well ever drilled in the Big Piney area. The structural conditions there are hard to correlate due to overthrusts and faulting, also an overlay of Tertiary. The Tertiary produces a very high grade crude of 45 gravity or higher and has led to the search for a deeper pool in a sand that would act as a feeder for the shallow production. The Transcontinental Oil Co. is drilling a deep test and has the hole at 700 feet with the 15-inch casing set.

Colorado Tests

At Steamboat Springs, Colo., The Texas Co. has completed its second test on the Tow Creek Dome to a depth of 3,020 feet. The location is on Section 18-6-86, about three-fourths of a mile south of No. 1 and about 12 miles from Steamboat Springs. The well is making some oil from the shale but not as much as the first well, there is about 500 feet of oil in the hole at present.

The Union Oil Co. of California's No. 1 Scott, drilling in the Fort Collins, Colo., Field is expected to be the next producer to be reported in the pay in that operation. The well is now at 4,204 feet and drilling after having set the 6¼-inch casing. The same company's No. 1 Hess, in the same field is drilling at 4,275 feet and is running the 6¼-casing. Tank car loadings dropped a little in the Fort Collins Field the past week due to some of the producing wells being shut down for cleaning out work. Six cars were sent out every other day, the crude going mainly to Florence where the Standard of Indiana has a refinery.

Montana Operations

The Devil Basin in central Montana, north of Roundup is to have another well drilled this season. This field was opened in 1919 and was the first oil producer in the State. The crude is a heavy black oil that contains considerable sulphur and has not yet found a market. An odd fact in connection with this field is that the wells drilled so far all show for a nominal production and when pumped, make about 25 bbls. per day. However, when shut in, the wells build up a heavy pressure which is taken to indicate the wells are being fed from another pool than the present field.

In the Sunburst Field in Toole County, the Ferdig Syndicate found a good producer on Section 29-35-1 at 1,485 feet in the Ellis sand. It will make 100 bbls. and this is the seventeenth consecutive producer on this area known as the Anderson farm. The operators in Sunburst have been drilling their wells with only a few joints of large pipe at the top and the rest of the hole open. In case the well is dry, there is no expense for casing except the few joints at the surface, which are salvaged. If the well comes in a producer the operators then bring a string of casing in and place it. In this way the work of drilling is lessened and the expense of putting down a well cut to a minimum.

Seventeen wells are now drilling in Sunburst and 19 locations have the rigs up and ready for the tools. While the rest of the fields of the Rocky Mountain region are backing and filling, the Sunburst operators are going ahead with the work of development in a way to pass all previous records for development. The average depth of the Ellis sand is around 1,500 feet and this makes it an economical proposition for the little fellow.

O'Neil Brothers brought in a producer good for 150 bbls. on Section 33-35-2 at 1,510 feet and the Kaufman interests brought in a producer good for 50 bbls. on Section 8-34-2 at 1,465 feet. The Johnson well on the Corey lease, Section 4-34-2, reported a producer last week, was given a shot of 60 quarts and responded with a flow during the following days at the rate of 35 bbls. per hour.

Sunburst Gusher

The Sunburst Field brought in a gusher in the Queen City Oil Co.'s well located on the famous Section 4-34-2 in the south end of the field that has produced a number of big wells the past year. The new well found in production in the Ellis sand, as did the other wells on that section, and is making about 4,000 bbls. daily. The strike is expected to add considerable impetus to the drilling campaign started in the field this spring and the work has already passed all previous records.

During April, the Standard of Indiana sent out of Casper a total of 12

(Continued on Page 108)

News from Fields of Canada

By Victor Lauriston

CHATHAM, Ont., May 2.—In southern Alberta, important indications of oil are reported from the Canadian Oil & Refining Co.'s Rogers-Imperial well on Section 29-1-11w4, about 35 miles east of Coutts, and almost due north of the Sweetgrass Hills area in northern Montana. The oil is reported coming with the gas encountered more than a year ago at around 2,500 feet. Lately the gas with an estimated flow of 22,000,000 feet a day has been carried by a 6-inch pipe to a distance of 280 feet from the derrick and for about a week was allowed to burn wide open, until it could be "mudded off," preparatory to drilling deeper for oil. The oil was secured in small quantities from a drip in the 6-inch pipe. Samples have been brought to Lethbridge to be tested. It is claimed the oil comes from the top of the Ellis sand, to which point the well was deepened last season; but the test will have to be drilled into the sand to get commercial production. Casing will be set and drilling continued as soon as possible.

In east central Alberta, British Petroleums, Ltd., is deepening No. 3 well in the Irma-Wainwright Field. This will probably be carried below the producing horizons of the other Irma-Wainwright wells as a deep test of the field. No. 5 is rigged up, but has not started drilling. It is reported that British Petroleums, Ltd., has secured acreage in the Turner Valley-Okotoks Field, southwest of Calgary, and will move one of its drilling outfits to that field for a test.

It is reported Alberta Refineries, Ltd., of Calgary, capitalized at $165,000, will build a small refining plant at Edmonton to operate on Kevin-Sunburst crude.

In the Lac La Nonne area, John O. Williams and associates of Calgary, have organized The Exploration Co., Ltd., to develop the asphalt deposits on the J. Trifoli farm. Asphalt deposits were known in the Lac La Nonne area some 15 years ago, the original find being made by a Californian homesteader named Loveless, who eventually relinquished his holdings without attempting development work. About 1912, the Nakamun Oil Well Co. started drilling near another deposit 1½ miles southeast, later moving its test north to the James Hinchley farm, where drilling was carried to about 840 feet. At this depth heavy tar sands were encountered, but the cable broke and the tools were lost and eventually the company quit work. Test of the asphaltum sand outcrops on the Trifoli farm are reported to show 85 per cent pure asphaltum.

Ontario Fields

In the Ontario fields, in Kent County, Union Natural Gas Co.'s No. 19 in the Trenton Field, in Dover Township, is reported drilling at about 1,200 feet on a deep test. In the Tilbury Field, Union Natural Gas Co.'s No. 257 Askew farm, Tilbury East Township, is down about 900 feet on a test of the Tilbury gas sands.

In Norfolk County, in the new field near Courtland, the Dominion Natural Gas Co. is resuming work on No. 2 test, which was shut down last fall owing to drilling difficulties. No. 5 has been located on the northwest part of Lot 17, Concession 3, Middleton Township, across the road and immediately south from No. 4.

Ontario Gas Items

G. F. Henderson, of Ottawa, drainage referee for Ontario, has been appointed natural gas referee under the amended natural gas conservation act. Mr. Henderson takes over the rate-fixing jurisdiction previously vested in the Natural Gas Board of Reference. This board comprised D. O. Ellis, chairman; C. E. Steele, representing the gas interests, and J. W. Ward, representing the consumers. Under the new legislation an appeal will be made to the higher courts from the decisions of the referee. Mr. Henderson previously served as referee before the Natural Gas Board of Reference was constituted.

In Welland County, the Provincial Natural Gas Co. is applying for an increase in rates. The present rate is 75 cents per 1,000 feet for natural gas, but the company has supplemented its supply by importing artificial gas. A hearing was held at Bridgeburg, on April 24, and was enlarged till May 24.

International Petroleum Co., of Toronto, has declared a dividend of 25 cents on its shares, payable April 29 to shareholders of record April 27.

Built In and Built On

SAFETY Platforms are desirable accessories to International "Ideco" Derricks of Galvanized Structural Steel. There are other important factors of safety—factors which have won for "Ideco" the oil producer's respect in every oil field.

STRENGTH!

Galvanized Steel beams, bars and angles—the best materials; no seconds or rejects—go into their construction. That is the first requisite for strength. It is from these that International "Ideco" Derricks are built.

Engineered and built by structural engineers who have studied the specialized requirements of each oil field and built accordingly. Per example note how torsional strain is minimized by the manner of attaching the lower ends of braces a little above the girt connection by the International patented simple reenforced bolt connection.

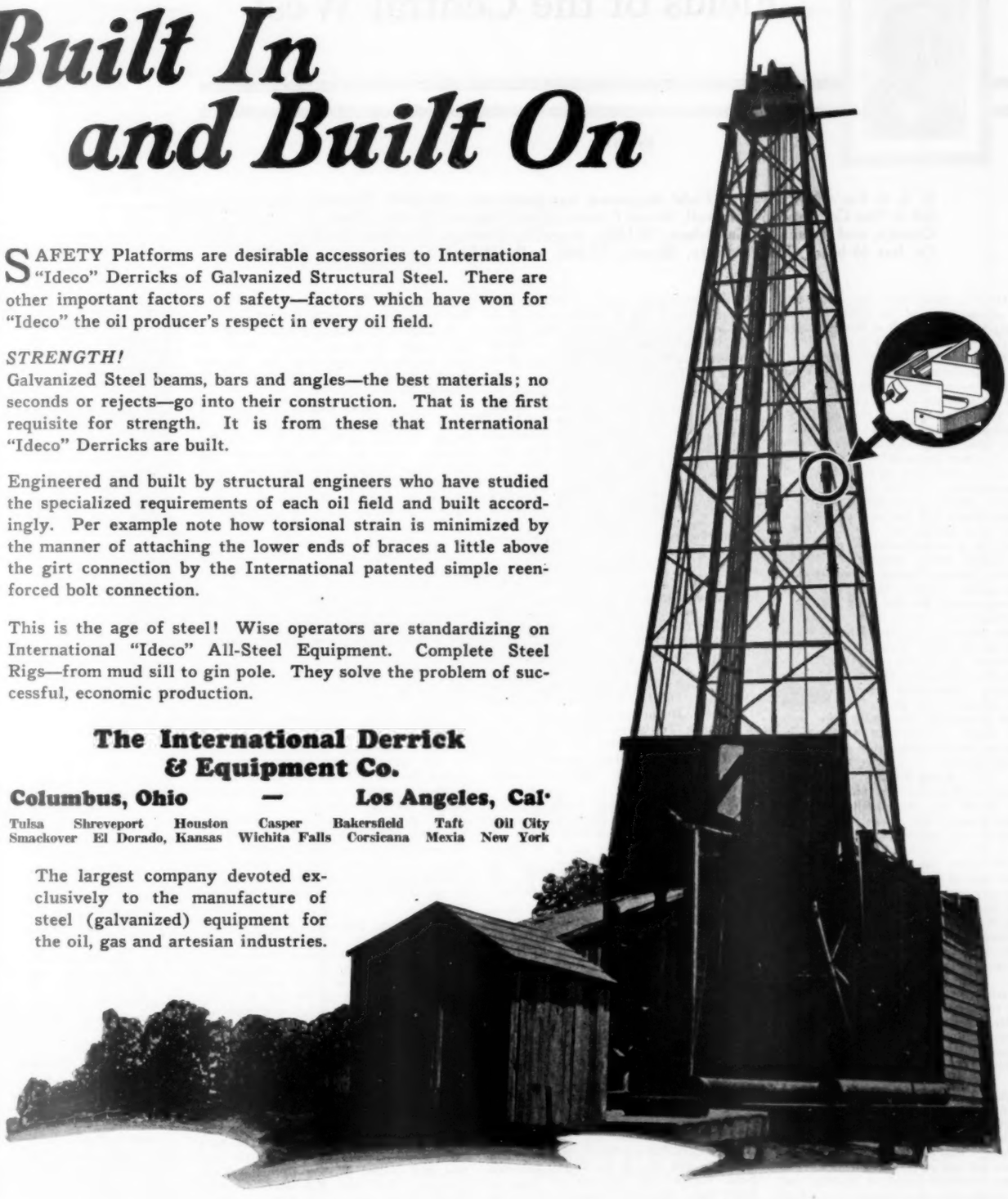
This is the age of steel! Wise operators are standardizing on International "Ideco" All-Steel Equipment. Complete Steel Rigs—from mud sill to gin pole. They solve the problem of successful, economic production.

The International Derrick & Equipment Co.

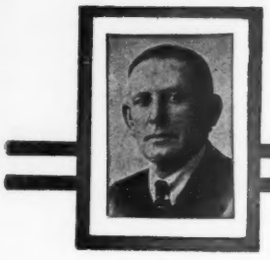
Columbus, Ohio — Los Angeles, Cal.

Tulsa Shreveport Houston Casper Bakersfield Taft Oil City
Smackover El Dorado, Kansas Wichita Falls Corsicana Mexia New York

The largest company devoted exclusively to the manufacture of steel (galvanized) equipment for the oil, gas and artesian industries.



INTERNATIONAL STEEL IDECO DERRICKS (GALVANIZED)



Fields of the Central West

By Whit

U. S. A. Co.'s No. 2, Payne Field, deepened, has produced 1,500 bbls. Donald Oil & Gas Co. gets 35-bbl. well, Wood County; Lee Watson, 21 bbls., Shelby County, and Young & Geselchen, 30 bbls., Augalize County. Trenton Rock Co. has 40 bbls., Clark County, Illinois; 70-bbl. well, Wabash County.

FINDLAY, Ohio, May 4.—A general survey of the fields of the Central West, including the Lima Field of northwestern Ohio, Central Ohio Field and Indiana and Illinois, shows about the usual amount of development work. New wells brought in do not increase the daily production as a whole to any extent, owing to the rapid decline from the flush and the gradual decrease in the older wells. Just at present the Lima Field is far ahead of other sections of the Central West and for the week in review reports 21 completions, 4 dry holes, 1 gas well and a flush of 215 bbls. The Central Ohio Field had but one completion, a 5-bbl. well drilled by the East Ohio Gas Co., in a second venture on the J. Clark Smith farm, Section 7, Hardy Township, Holmes County, from the deep Clinton sand. Illinois is credited with four completions, one dry, and 120 bbls. new production. There were also seven old wells abandoned in the Illinois Field and 12 in the Lima Field. Neither the old Trenton Rock area nor the Princeton Field of Indiana, reported a single completion. Operations are rather quiet in the central Ohio gas area, although the gas companies are doing the bulk of the work, and making preparations for the big annual convention at Atlantic City this month.

Lima Field

There is a little real excitement in the Payne Field, in Harrison Township, Paulding County, far to the north of the old lines of the Trenton Rock area. The U. S. A. Oil Co.'s No. 2 well, 900 feet from the north line and 150 feet from the west line of the C. C. Springer farm, was drilled deeper with excellent results. It had been drilled to a total depth of 1,457½ feet, or 55½ feet in the Trenton, and showed around 70 bbls. flush, but on account of the strong gas pressure had been cutting the oil to a considerable extent, and in order to overcome this trouble was drilled 12 feet deeper to a total depth of 1,469½ feet, and given a shot of 100 quarts, which was, according to reports, one of the most beautiful shots so far seen in the new field. There were 800 feet of fluid in the hole when the shot was lowered and following the shot, after cleaning itself, flowed approximately 25 feet above the derrick and continued for an hour until the well was shut in and connected to storage. The well flowed steadily and has done all told around 1,500 bbls. The same day another event of interest and great satisfaction to everyone in the field happened, the recovery of the tools of Ledford & Robinson from No. 3 on the John T. Schenck's Springer lease adjoining the Bailey farm. This well has been delayed for ten days or more. The tools were lost at about 500 feet in the lime and in trying to fish them out two more strings were lost, making nearly $1,000 worth of tools in the hole, all hitched together making a total length of 150 feet. The credit for saving the loss of the well and tools goes to Capt. J. A. Smeithers, Major A. J. Markey and Colonel Loudenbeck.

John T. Schenck's Nos. 1 and 2 on the Springer are now pumping daily and the first car of oil has been loaded for shipment. No. 3 has the casing set and the drill going down toward the sand in good order. No. 3 of the U. S. A. Oil Co., on the Bailey farm, is setting casing, and No. 4 rig is ready to spud as soon as No. 3 is completed. The Aetna Drilling Co.'s three wells close to Payne are pumping daily under the supervision of "Doc." Thompson.

Chicago interests that are going to put in the gas line have the money raised, according to advices, for the line and are ready to go ahead as soon as the contract is closed with the purchasers of the gas. It is a question just where the first line will be laid, to Fort Wayne or Van Wert, but it will be one or the other. Finding a larger producing area in Paulding County is probable and with the work planned greater production should be found.

Wood County

In Wood County, in fact all over the Lima Field, work is improving to some extent. Southwest of Bowling Green, in Plain Township, Ladd & Morrison's No. 4 well, 2,075 feet from the north line and 325 feet from the east line of the Joe Lane farm, Section 33, pumped 8 bbls. from a total depth of 1,372 feet. The Queen Oil Co. is drilling a test on the Fred J. Hendricks farm, same section. In Portage Township, Mattie G. Rouse is drilling No. 23 on her own farm, Section 19, and F. W. Munn has abandoned No. 2 C. Potter farm, Section 8, same township.

In Henry Township, Wood County, the Donald Oil & Gas Co.'s No. 21 well, 660 feet from the north line and 1,100 feet from the east line of the J. W. Sterling 80 acres, Section 21, produced 35 bbls. from a depth of 1,334 feet. No. 12, same farm, has been adandoned by this company as was No. 4 Bloom heirs' farm, Section 16. The Ohio Oil Co. is drilling No. 45 B. A. Lawrence farm, Section 24, near Lawrence Mills, north of North Baltimore, in the same township, and J. T. Montgomery is starting No. 19 on the J. J. Faylor farm, Section 9. In Bloom Township, the Ohio Oil Co. is drilling No. 25 on the Andrew Emerine farm, Section 7. In Liberty Townshin, the same company is drilling No. 11 P. Smith farm, Section 36. Hulse & Kundtz abandoned Nos. 1 and 2 C. S. Seitz farm, Section 7, and Huffman & Hass abandoned Nos. 2 and 3 Fred J. Wolfe farm, Section 8. In the same township, Ogden G. Rouse and others' No. 36 well, 715 feet from the south line and 1,200 feet from the east line of the Frank Stratton farm, Section 20, pumped 15 bbls. at 1,541 feet. Hulse & Kundtz's No. 4 D. W. Levers, Section 4, pumped 2 bbls. at 1,390 feet.

In Perrysburg Township, Wood County, John E. Welton and others' No. 7, on the northwest corner of the Henry and A. H. Lindmeier farm, Section 28, made a flush of 20 bbls. Top of Trenton struck at 1,239 feet and the oil 50 feet in the sand. In the same township, William G. Groble's second well, 400 feet from the south line and 50 feet from the east line of the H. Grolle farm, Section 33, pumped 15 bbls. Top sand found at 1,230 feet and oil at 20 feet in. In the same tomnship, Gage & Eurnell are drilling No. 2 Delos Speek, Section 32; Lewis W. Johnson is working at No. 6 Alexander Beard, Section 33, while John E. Welton and others are drilling No. 8 Lindemier farm, Section 28. In Middleton Township, Charles Tanner is drilling No. 1 on his own farm, Section 21.

In Orange Township, Hancock County, the Janeri Oil & Gas Co.'s wildcat on the southwest corner of the Edward Nontwell farm, in the southeast quarter Section 14, is a duster.

Allen County

In Spencer Township, Allen County, Wolfe Brothers & Gervin Oil Co.'s No. 2 well, 1,200 feet from the north and east lines of the John Beerman farm, Section 23, pumped 15 bbls. In Jackson Township, Carman, Botkins and others have a rig in for a test on the Seth McKee, Section 3. In Shawnee Township, Kelley Brothers are making ready to start spudding a test on the W. H. Breese farm, Section 2. In Marion Township, Joseph B. Mayer is drilling No. 12 Dave Brenneman, Section 12, and the Ohio Co. is drilling No. 10 D. H. Counsellor, Section 13. In Perry Township, the Ohio Oil Co. abandoned No. 13 Ben C. Faurot farm, Section 30.

In Moulton Township, Auglaize County, Harold M. McClure abandoned Nos. 2 and 3 on the John Sutton farm, Section 7. W. B. Jack is drilling a test on the Fred Underwood, Section 33. Fowler Brothers Petroleum Co. is drilling a test on the Milton Wolfe, Section 34. In Salem Township, Duke and Galloway are drilling a test on the George Hettinger, Section 34, as well as a test on the W. E. Miller, same section. In Jackson Township, the Rock Oil Co.'s wildcat on the southeast corner of the Robert Steinerman, Section 28, came in a duster, and unknown parties are working at a test on the J. H. Koester, Section 26, same township.

In Recovery Township, Mercer County, Sam C. Tate, Jr., drilled a 10-bbl. well at a test on the southeast corner of the Rose Fecher farm, in the east half of section 24. Top of sand was found at 1,145 feet and oil at 50 feet in. Ray Young and others' second well, 600 feet from the south line and 200 feet from the east line of the G. H. Dues farm, in the northeast quarter of Section 1, is a light gas well. In Union Township, the Ohio Oil Co. abandoned No. 4 Scott Bays farm, Section 13. In Butler Township, the Recovery Oil & Gas Co.'s No. 3 well, 1,000 feet from the south line and 280 feet from the east line of the A. McAfee, Section 30, found top of sand at 1,113 feet and drilled 53 feet in for a 2-bbl. pumper. M. P. Colt and others are drilling a second test on the William Miller, Section 4, Center Township. In Hopewell Township, same county, E. A. Kuhns and others' No. 5 well, 1,050 feet from the south line and 800 feet from the east line of the C. C. Ricketts, Section 1, pumped 10 bbls. A. J. Metzgar is drilling No. 1 Earl Schlenecker, Section 20, and the Home Banking Co. abandoned No. 1 Orval E. Sielschoot farm, Section 21. In Gibson Township, E. G. Henderson and others are drilling No. 5 Joseph Schmitz, Section 36, and the Central West Oil & Gas Co. is drilling No. 7 P. J. Schmidt farm, same section. In Jefferson Township, D. A. Miller and others are drilling a wildcat on the J. W. Monroe, Section 33. In Liberty Township, the Celina Petroleum Co.'s No. 4 well, 300 feet from the north line and 900 feet from the east line of the Brehm Brothers' farm, Section 4, pumped 10 bbls.

In York Township, Van Wert County, Stelzer & McClure are drilling a second well on the Keyser-Forewatter farm, Section 15.

Darke County

In Mississinewa Township, Darke County, H. A. Marlin's No. 6 well, 730 feet from the south line and 600 feet from the west line of the Jacob Schoen farm, Section 2, was dry. Top of sand was found at 1,201 feet and drilled 49 feet in.

E. T. Robinson and others are drilling a test on the E. W. Snyder farm, Section 15, Eden Township, Seneca County. Arthur Geyer and others have a rig in for a test on the James Shertzer farm, Section 30, Clinton Township, same county.

In Monclova Township, Lucas County, Doblinger Brothers are drilling a test on the Mrs. A. Ward farm, Section 9, in hopes of picking up the well known "sucker-rod" belt that passes through that vicinty and extends across Wood County a little to the southeast, thence into Hancock County. This belt produced some wonder wells in the early days of its development, wells that made the Trenton Rock famous.

In Cynthian Township, Shelby County, Lee Watson drilled in his test in the southeast corner of the Henry Sherman farm, in the northeast quarter of Section 27, that produced 21 bbls. the first 24 hours. Same party drilling a test on the J. H. Barhorst farm, Section 34. American Natural Gas Co. is working at a test on the J. Zinnbarger farm, Section 2, and Slagle & Johnson are drilling No. 2 Frank Danzig farm, Section 16. The Eilerman Oil Co.'s No. 5 well, 4,660 feet from the south line and 300 feet from the east line of the Anna Eilerman farm, in the southwest quarter of Section 26, proved a duster.

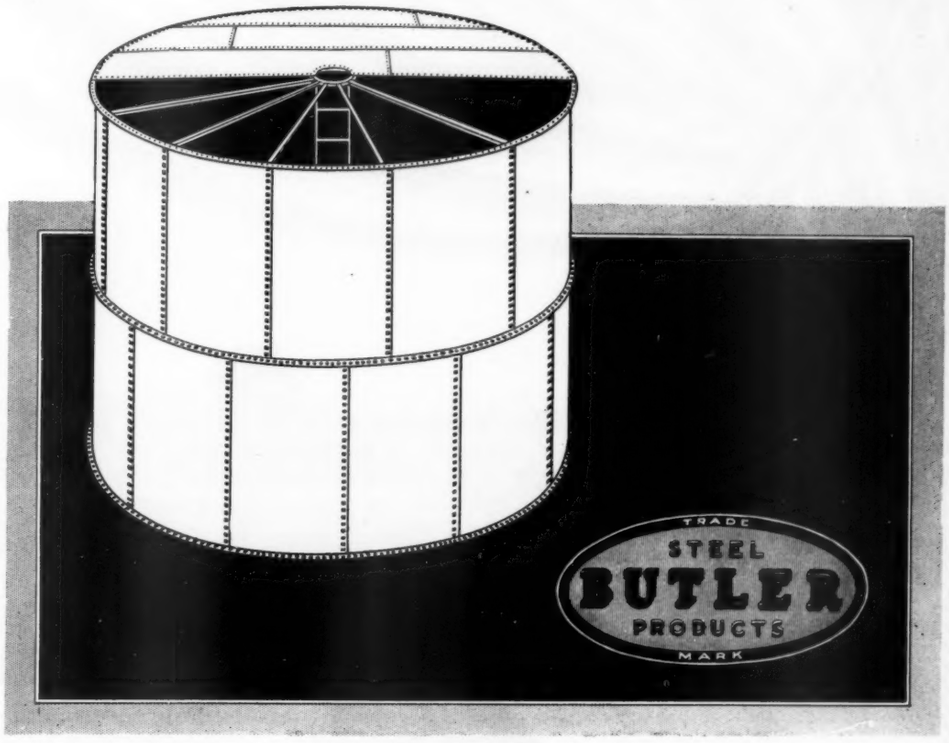
In McDonel Township, Hardin County, the Cockley Oil Co.'s No. 3, in the northeast corner of the Malinda E. Greentree farm, pumped 5 bbls. Sand was topped at 1,445 feet and drilled 55 feet in. The Boston Southwestern Oil & Gas Co. is drilling No. 1 Mary Clark farm, and the Roundhead Oil & Gas Co. is drilling No. 6 Earl Hites farm. In Roundhead Township, same county, Whipple, Ulrich and others' test on the J. Nichols farm, estimated around 2 bbls, sand being found at 1,402 feet and drilled 40 feet in. In Marion Township, same county, Schmidt and others are drilling a well on the James Gossley farm, Section 29.

In Moulton Township, Auglaize County, near Wapakonetta, Young & Geselchen's No. 5 well, 700 feet from the south and east lines of the W. E. Cook farm, Section 34, pumped 30 bbls., and the Iron Mountain Oil & Gas Co.'s No. 3 James Rapp farm and 300 feet from the north line and 800 feet from the east line of the lease, in Section 34, pumped 15 bbls.

Indiana

While no completions were reported for the week from any section of Indiana, there is one important wildcat under way that will be watched with interest. This is being drilled for a deep test by the Howe Oil & Gas Co., with T. W. Hunt as field manager, near the town of Howe, in Lagrange County, Indiana. Howe is on the Grand Rapids & Indiana Railroad, north of the town of Lagrange, Ind., and the first station of any consequence on the railroad south of Sturgis, Mich., and in the northwestern part of Indiana, to be exact, the second tier of counties from the eastern State line. This well up to date has 309 feet of 10-inch pipe and 818 feet of 8-inch, and now shut down with an 8-inch hole at the depth of 1,600 feet, to set casing, with a hole full of water. The drill at the present depth had drilled into 15 feet of blue shale. After casing is set, it is expected to require at least 15 days to strike the sand, which will probably be the Trenton Rock. It would not be surprising to learn that production has been found when drilled to the proper depth to find the well known Trenton.

(Continued on Page 150)



QUICK SERVICE

may be had from these dealers in Butler products: M & V Tank Co., at Wichita Falls, Vernon and Olney, Texas; Drane-Humphrey Co., at Fort Worth, and Big Lake, Texas, and Carlsbad, N. Mex. Drane Tank Co., at Tulsa and Holdenville, Oklahoma; May Tank & Supply Co., at Casper and Salt Creek Wyoming; M. A. Trimmer, at Blackwell, Oklahoma; Wilson Tank & Culvert Co., at San Antonio, Texas.

BESIDES TANKS

the Butler line includes the following products:

Ready-Made Steel Buildings.
Underground Tanks.
Storage Tanks.
Cans, Funnels, Buckets Measuring Pumps, Etc.

Butler Bolted Tanks Store Crude Oil Safely!

ALL holes in each body sheet are punched at one time. And other holes are punched by special multiple punching dies—even those around outer edge of deck and bottom.

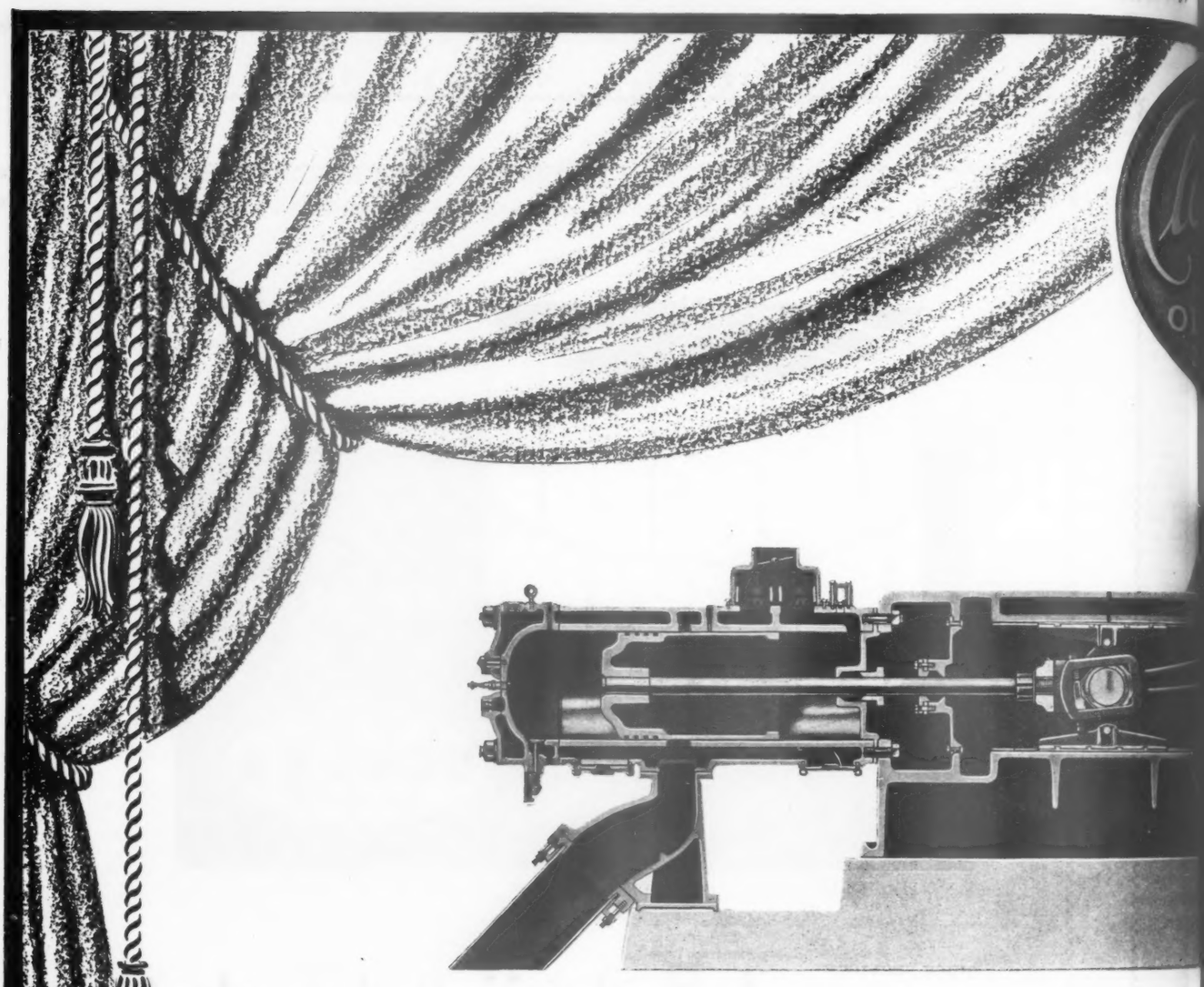
Thus, accurate and easy assembling is assured.

Because of the accurate manufacture and tight construction Butler Bolted Tanks are safe storers of crude oil. They preserve gravity by holding down evaporation! They retain practically the original quantity of oil!

You can learn how to conserve your oil profits by getting all details. Interesting catalog on request. Attractive prices quoted. It will pay you well to get in touch with one of our representatives or address one of our two factory offices:

Kansas City, Missouri. Minneapolis, Minnesota.

BUTLER MANUFACTURING COMPANY

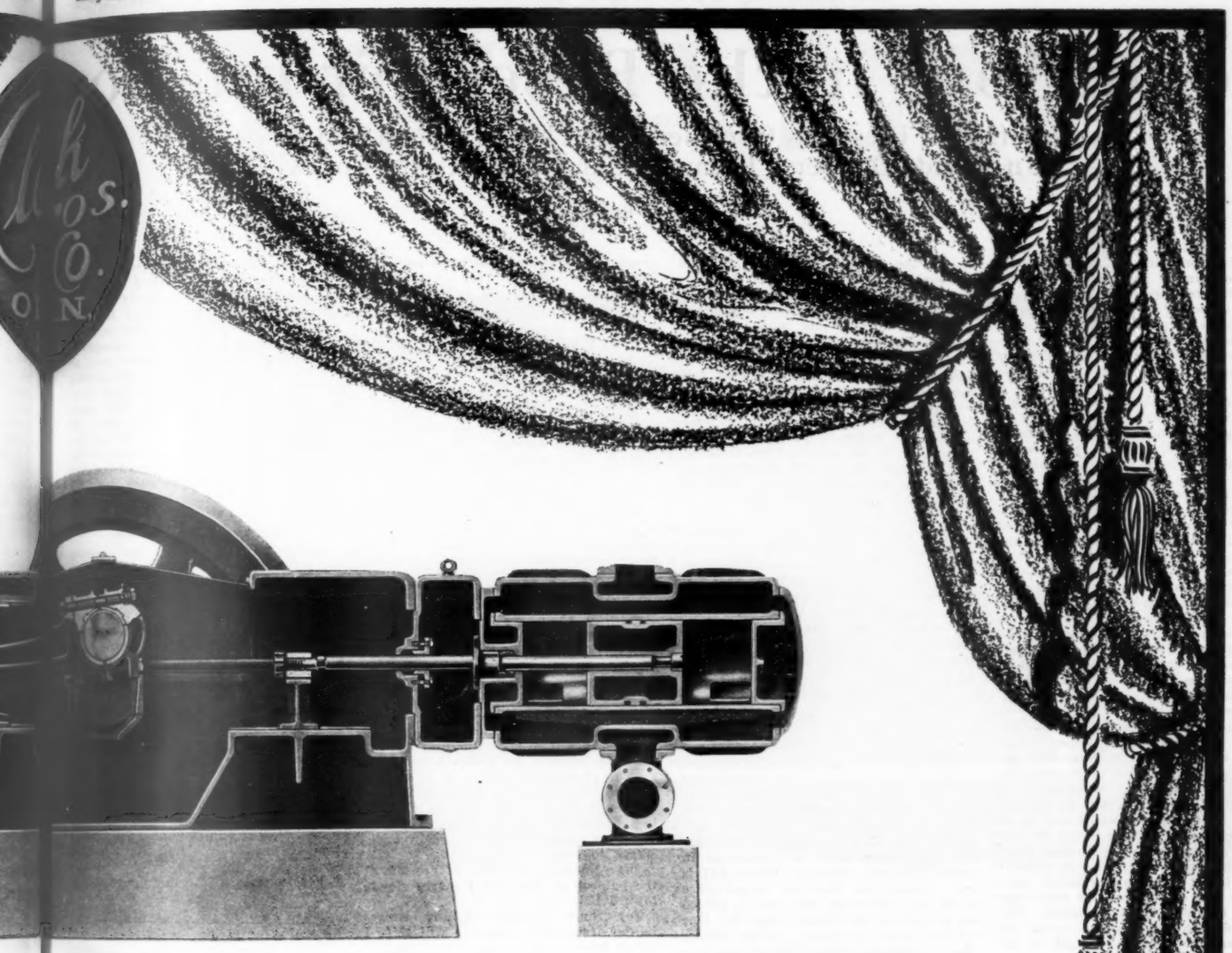


Revealing New Heights of Co

It is a matter of record that Clark Compressors are everywhere establishing new marks for operating efficiency. One of the main reasons is the unusually heavy and rugged construction of these superior engines. This construction, combined with skillful design explains why Clarks will operate successfully and continuously at their rated load and, when necessary, take a considerable overload.

Distributors
Mid-Continent
GAS ENGINEERING AND CONST.
COMPANY
125 W. First Street,
Tulsa, Oklahoma

CLARK CO



Compressor Performance

The Clark Engine can also maintain a higher operating efficiency due to the fact that it will deliver its rated load while developing a normal mean effective pressure. Large water jackets and over size exhaust are outstanding features. Low M. E. P., proper cooling, and minimum back pressure at exhaust port are largely responsible for the excellent records established by Clarks wherever installed.

Distributors

Pacific Coast

SMITH-BOOTH-USHER COMPANY

228 S. Central Ave., Los Angeles

50 Fremont St., San Francisco

COMPRESSORS

Conditions in the Reservoir Interior

Different Pressures Considered in This Article of Series on Fluid Delivery From Oil and Gas Reservoirs

By Stanley C. Herold
Petroleum Geologist, Stanford University

The two preceding installments dealt with the primary functions of delivery from such reservoirs which we have specified as belonging to Hydraulic Control. The formulas expressing the mathematical relations between these various functions give rise to two groups of delivery laws, the fundamental and the derived laws.

We have seen that time, of itself, causes no change and is accompanied by no change in certain primary relations; to wit, pressure, velocity, acceleration and power. These functions maintain constant values throughout finite time. Life for these reservoirs is infinite. Such is the mathematical significance of the straight horizontal line, of unlimited length, in our curves representing the fundamental laws of fluid delivery.

As the next consideration, we take up the investigation of events and conditions in the reservoir interior. Again we may say that time, of itself, causes no change and is accompanied by no change within the reservoir. The secondary functions of delivery, mentioned in Articles 43 to 45, remain in a fixed state throughout the life of the given ideal hydraulic control reservoir.

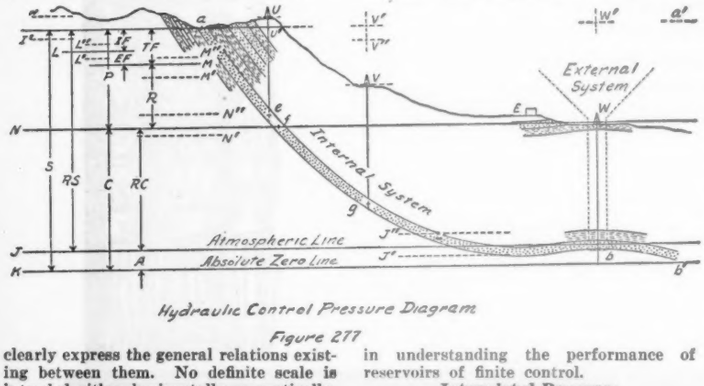
As to the physical state of the reservoir interior, all reservoirs are either hollow or filled with a porous medium. Although we need investigate both our particular attention is devoted to the latter class. Provided we define no limits to the size of such hollow spaces which are to be designated as pores, may it not be said that all oil and gas wells produce from formations which are porous in nature? Control is not dependent primarily upon what we may call "pores," be they large or small according to our definition. For any given porous medium, either of coarse or fine texture, control is determined by pressure.

We continue our discussion in terms of the ideal reservoir.

Classification of Pressures

277. Figure 277 is designed with the idea of presenting a complete conception of the various pressures functioning within the hydraulic control reservoir. The scheme is purely diagrammatic. Any notion of exact relative values for the quantities is sacrificed in the attempt to clearly express the general relations existing between them. No definite scale is intended either horizontally or vertically. The pressures, which are here represented by vertical distances between horizontal lines, may be considered, if desired, in terms of pounds per square inch, or simply as "pressure head in feet."

For the purposes of illustration, the figure is adapted to the conditions specified for an oil or gas well reservoir of this control, although the same pressure scheme is equally applicable to any class of reservoir of the same control. Naturally, the relative importance of these pressures will differ as between a hollow reservoir and one filled with a porous medium, or between a reservoir with gas alone, one with liquid alone and one with both fluids in combination.



Hydraulic Control Pressure Diagram

Figure 277

This profile sketch shows a porous sandstone formation lying between two impervious shale beds. The sandstone outcrops at a and extends downward, forming a cylindrical surface with horizontal axis, indefinite in its extent perpendicular to the plane of the drawing. (Articles 98 228 and 243). The mathematical orifice is located at b, dividing the internal and external systems of the reservoir. (Articles 63 and 64)

278. Pressures, we say, are represented by vertical distances. Then we may take note of the correspondence between Figure 277 in its vertical dimension and Figure 247 in the direction of its ordinates, the latter being the pressure-time curve for just such a reservoir as is represented by the former. The following relation is observed:

In Figure 277		In Figure 247
Line A	corresponds to	Line I
" J	" "	X"-axis
" J	" "	X"-axis
" K	" "	X'-axis

The figures do not correspond in horizontal extent since one possesses abscissas in "time elapsed" and the other merely shows unscaled distances. In the language of mathematics, it can be said that Figure 277 is a diagram on a Space Manifold where space is represented in two dimensions, and that Figure 247 is on a Space-Time Manifold where space is of one dimension and time is placed on an axis at 90 degrees from it. One of the space dimensions in the former figure becomes replaced by the time axis in the latter, or vice versa. We may, if we should so choose, confine our analysis on these reservoirs to the space manifold, that is, on Figure 277, because time, of itself, causes no change and is accompanied by no change within the reservoir. However, since we have an economic interest in "production curves," we shall replace a space dimension by the time axis on various occasions during the discussion. This procedure will also aid us in understanding the performance of reservoirs of finite control.

Interrelated Pressures

279. Figure 277 shows ten interrelated pressures which we are to analyze. We shall assume all natural conditions to be ideal and by enforcing known changes upon the reservoir, we shall observe the effects upon these pressures. As these pressures alter in value, all primary functions of delivery change their values in accordance with the laws of delivery. By this investigation we shall come to understand Theoretic Performance in its mathematical and mechanical aspects and observe its economic importance. (Article 95.)

The ten pressures are as follows:

Symbol	Name
S	Static Pressure
A	Atmospheric Pressure
RS	Registered Static Pressure
C	Constant Back Pressure
RC	Registered Constant Back Pressure
P	Potential Pressure
IF	Internal Friction Head
EF	External Friction Head
TF	Total Friction Head
R	Residual Pressure

In ideal performance, all these pressures possess a constant value throughout the life of a particular potential reservoir. (Article 38).

Static Pressure

280. The distance between the lines K and I in Figure 277 represents the static pressure of the reservoir. It is the pressure which was described in Article 235 as the total closed-in pressure. The method of obtaining the value of this pressure for a particular reservoir was there discussed.

The line K, representing the absolute zero line, can not alter its position under any circumstances. The only manner in which S can take on a different value is by a shifting in the position of the line I. This can be brought about in several ways:

(a) An alteration in the difference of elevation between the points a and b as a result of geologic changes in the earth's crust through elevation or subsidence at one or the other point. By an increase in the difference of elevation, the line I moves to some position I" and by a decrease to some position I'.

(b) Natural processes of erosion at the outcrop a. The line I moves slowly toward I'.

(c) Since S includes A, any changes in the atmospheric pressure will shift I up or down.

(d) Failure of the water supply at a in keeping pace with production at W. This may due to physiographic changes in the area about a or to an increase of production from the single or multiple orifice. (Article 73). This is a case of oscillation of control. (Article 87).

Atmospheric Pressure

281. The line J represents the atmospheric line. A uniform increase in barometric pressure in the area above a and W shifts J to some position J" and, as we have just seen this shifting carries the line I with it, through the same distance. Conversely, a decrease in atmospheric pressure moves J to J', taking I to I'.

When the changes in the barometric column are not uniform over the entire region then a high pressure area over a, as compared with the pressure at W, will raise I through a greater distance than J. The effect of this is similar to the increase in S due to the other causes (a) and (b) above. Likewise, a low pressure area over a will lower I through a greater distance than J.

The removal of part of the atmospheric pressure at W or at b by means of a vacuum pump has the effect of shifting J to some position J', and this is equivalent to the raising of I to I", the shifting of both lines being equal in amount but opposite in direction. In general, any shifting of the line J may be completely ignored in petroleum engineering practice. Such small variations can safely be neglected in view of the comparative greatness of the other pressures which are subject to fluctuation in the actual reservoir.

Registered Static Pressure

282. That portion of the static pressure indicated by any measuring device which has its zero set at atmospheric pressure is the registered static pressure. In Figure 277 it is represented by the distance between the lines J and I. If the ordinary pressure gauge is employed in measuring, it is assumed that the gauge properly reads zero when subjected only to the pressure of the atmosphere.

The registered static pressure may alter in value as a result of the shifting of either I or J. If the two lines move in opposite directions, i.e., they move toward or apart from each other, the combined effect is the sum of the two separate effects. When they move in the same direction the separate effects tend to offset each other. In such case, the combined effect is equal to the algebraic sum of the two separate effects.

Constant Back Pressure

283. The pressure in the external system which opposes or tends to oppose flow at the orifice b is the back pressure. (Article 65). There are two kinds of back pressure; one acts as a mathematical constant and the other as a mathematical variable. Production from oil and gas wells always takes place against both of these because neither one can actually be reduced to zero in practice.

As stated in Article 67, the constant back pressure with gas wells is represented by the line pressure plus the atmospheric pressure and with oil wells by the weight of the column of fluid in the casing plus the atmospheric pressure. In Figure 277 this pressure is represented by the distance between the lines K and N. The value of the constant back pressure may only change by a shifting of the latter line.

Fluctuations in the line pressure lead-

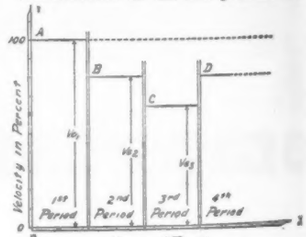


Figure 295

ing off from a gas well shift N in the direction of N' or N" according to whether there is a decrease or increase, respectively. The open flow test is made of course, under conditions where N is shifted downward to coincide with J.

In the case of an oil well, if we force the well to deliver its fluid to a tank as at E, then the line N is shifted upward toward N", increasing the constant back pressure. The operation of a pump at W which succeeds in lowering the liquid in the hole will lower N through a distance exactly corresponding to such lowering of liquid. The removal of the entire weight of liquid on b by pumping at the same rate at which the liquid enters the bottom of the hole shifts N downward so as to coincide with J. Right here we have the basis of the economic success realized by the installation of pumps on oil wells. (As an example, the removal of 3,000 feet of 32 degree Baume oil by means of a pump reduces the constant back pressure at b by approximately 1,124 pounds per square inch).

Constant Back Pressure

284. The constant back pressure minus the atmospheric pressure is the registered constant back pressure. Its value may be determined either by measurement or by computation in the case of an oil well and by measurement only in the case of a gas well. When there is

(Continued on Page 96)

BOVAIRD

Running Tubing is Different Now

Running tubing has now been made safe and easy. Here is a bunch of pleased looking fellows who have just run 3,000 feet of 3-inch 10-pound tubing near Bristow, Oklahoma.

The Bovaird Tubing Spider is absolute assurance against dropping tubing while running or pulling. It is positive in action, closing by force of gravity, not depending on springs to either open or close. It releases instantly and quickly by a slight pull on the lever at the side. In pulling, the slips automatically "ride" the tubing and open and shut automatically as the couplings pass through. By changing slips the Bovaird Tubing Spider handles all sizes of tubing, 3-inch and smaller, either regular or upset.

Bovaird Stores

Sapulpa, Okla.
Begge, Okla.
Slick, Okla.
Lyman, Okla.
Bristow, Okla.
Stroud, Okla.
Okemah, Okla.
Independence, Kans.

Headquarters

Tulsa, Oklahoma

Pennsylvania-West Virginia

By D. S. Wakenight

Deep sand territory in southeastern Ohio leads in producers. Sunday Creek Coal Co. well in Perry County makes 225 bbls. initial. E. H. Everett Co.'s well in Licking County swabs 110 bbls.; Atha Oil Co.'s completion in Perry County, 100 bbls., and Planet Oil Co. gets 50-bbl. producer there.

PITTSBURGH, Pa., May 4.—Operators in the eastern fields had a little better success in the size of the wells completed. The most of them are located in the deep sand territory in southeastern Ohio, a section that is furnishing the greater part of new production. However, operations are slowing down and the month of April will show very little if any more new work under way and starting at the close of the current month than at the close of March. The market alone is responsible for this condition. Had the slump of a few weeks ago not come, by this time there would be a great deal more new work under way. There is still much territory that can be drilled over with the assurance of getting light pumpers. To stimulate work in this kind of territory it will require a market at least 50 per cent higher than the present quotation. The chances for anything better than light pumpers, except in the deep territory in southeastern Ohio, are very slim.

Southeastern Ohio

In Section 35, Coal Township, Perry County, the Sunday Creek Coal Co. has completed its No. 124 well on the Sunday Creek Coal Co.'s tract, and after a shot the well produced 225 bbls in the ensuing 24 hours. This well found the top of the sand at a depth of 3,542 feet and an oil bearing formation 35 feet thick. The well is 700 feet southwest of the same company's No. 121 on this tract.

Near Zanesville, in Section 21, York Township, Morgan County, the Sun Oil Co. has completed its No. 4 well on the Amos Souders farm and has a 20-bbl. per day producer from the Berea sand.

In Section 6, Enoch Township, Noble County, Otto Paling and others have completed their initial test well on the James W. Bryson farm, through the Buell Run sand and it is dry. This test was drilled 1,000 feet northwest of production on the C. M. Harper farm.

In Section 36, Olive Township, Noble County, Williams & Clark completed their second test well, drilled one location north of their first test, on the J. W. Williams farm through the 700-foot sand and that formation is dry.

In Section 1, Jackson Township, Noble County, Worrell Brothers and others have drilled their initial test well on the J. B. Hutcheson farm into the Peeker sand and the well is producing about 5 bbls. per day with an immense quantity of water. This well is just back of the village of Dexter City.

Noble County Gasser

In Section 31, Enoch Township, Noble County, H. B. Tuttle and others have completed their initial test well on the Benjamin Corp farm at a depth of 1,630 feet and have a fair gas well. In Section 20, York Township, Morgan County, the Arkansas Oil & Gas Co. completed its initial test well on the Clarissa Stonehammer farm through the Berea sand and it is producing 700,000 feet of gas per day. This test is located 600 feet south of the first well drilled on the H. D. Fletchner farm. In the Wills Creeks Field, in the northwest quarter of Section 19, Island Creek Township, Jefferson County, Braden, Spear & Co. have drilled their initial test well on the John Spahn farm through the Berea sand and found only a very slight showing of oil. They will abandon this test.

Good Producer in Licking

Edward H. Everett Co.'s test on the T. H. Walcutt farm in the deep sand territory in southeastern Ohio, in Section 15, Hanover Township, Licking County, 700 feet west of M. F. Whitehill & Co.'s test on the Goldie Crawford farm, was drilled through and shot in the Clinton sand, and by swabbing they took out 110 bbls. the first 24 hours. A producer of this size, even in the deep sand territory, is a profitable investment. Unfortunately there are too few of them. It takes courage to drill in any locality at this time. It will require many years for wells of the present average size to pay back the money invested, and a good many of them will never pay out. Only those who are engaged in the industry know how hazardous is the business of trying for new production.

The shallow sand territory in southeastern Ohio is no more profitable than drilling in the deep territory, despite the fact that the cost to drill is many times less than in the Clinton sand territory. Light pumpers were the best this territory had to offer during the week. For a great many months there has been but one shallow sand district, York Township, Morgan County, that furnished better than light pumpers. At the beginning of development work in this pool some of the wells had an initial production of 100 bbls., but at the present time completing wells that average about 20 bbls. a day. The producing limits of the pool have been quite fully defined and all that is left is to drill the few remaining interior locations.

In Jackson Township, Noble County, Beeson and Athey have completed their No. 6 well on the Hupp and Murray farm and have a 5 bbl. per day pumper in the 500-foot sand. This well is located 350 feet east of same parties' No. 5 well on this farm. In Wells Township, Jefferson County, Jacob Needles and others have completed their No. 8 well on the Dean Criswell farm, 500 feet northeast of their No. 7 well, and it is producing 500,000 feet of gas. In Cross Creek Township, Jefferson County, Palmer and others have completed an initial test well on the McCullough Brothers farm, and after a shot is producing 5 bbls. per day from the Berea grit. This test is about one-half mile south of production on the Featner farm.

New Work Starting

In Section 18, Knox Township, Guernsey County, Keith and others have a rig on the ground for a second test well on the Keith Brothers farm.

In Section 17, Salem Township, Tuscarawas County, the Logan Gas Co. has a well started spudding on the Adam Cline farm. In Lawrence Township, Washington County, J. T. Campbell and others have started a second test well on the J. T. Campbell farm in Section 2, about 600 feet west of the Ft. Cumberland Oil Co.'s initial test well on the Charles Skinner 25-acre tract.

In Section 20, Warren Township, Washington County, the First National Bank of Lowell has completed its well No. 64 on the C. E. Smith farm to the Macksburg 500-foot sand and it is a dry hole. This well is about 1,000 feet southwest of the same party's No. 63 well on this farm.

Perry County Completes a Good One

In the deep sand territory, on the Ohio side, the Atha Oil Co. has completed its No. 7 well, and after a shot the well produced 100 bbls. in the ensuing 24 hours. This well is 600 feet south of the company's No. 5 on this farm, in Section 21, Madison Township, Perry County. In the southeast quarter of Section 24, in Washington Township, Hocking County, the Ohio Falls Oil, Gas & Supply Co. completed its second test well on the John Hoskins farm, and after a shot has a 20 bbl. per day producer in the Clinton sand. This location is 800 feet south of the same company's first test on this farm. In the Bergholtz Field, in Louden Township, Carroll County, the Louden Oil & Gas Co. has completed its second test well on the Belle Albaugh farm and it will be a very light producer. This location is 250 feet north of the company's first test well on this farm. Near Haydenville in the northwest quarter of Section 35, York Township, Athens County, E. L. Stephens completed his third test well on the Lick Run Coal & Clay Co.'s tract and has a 5 bbl. per day producer in the Clinton sand. On Lot No. 7, in Franklin Township, Licking County, W. W. and A. T. Wehrle have completed their initial test well on the B. Ewers farm, and it will not be better than a 3 bbl. per day pumper in the Berea sand. The same parties are drilling a second test well on this farm east of their initial test. On Lot No. 12, in Madison Township, Licking County, W. W. and A. T. Wehrle completed their first well on the C. V. Jefferson farm and have a light gasser in the Berea sand.

Shooting Helps

In Falls Gore Township, Hocking County, the Griffin Producing Co. gave its No. 4 on the Dora Thomas farm a shot of 340 quarts of the high explosive fluid and increased its production from a few bbls. to 20 bbls. a day. In Marion Township, Morgan County, R. H. Talbott & Co. completed in the Cow Run sand No. 5 on the D. H. Gardner farm, good for 5 bbls. a day.

In Section 22, Warren Township, Belmont County, O. A. Jones & Co. completed a test on the O. A. Jones farm. It is a dark oil producer good for 6 bbls. a day. In Section 6, Sunbury Township, Monroe County, the Soles Drilling Co. and others have a duster at a test on the Gordon Pew farm. In Section 36, Center Township, Roy Decker and others are due in the sand at a test on the Francis Sulsburger farm. In Section 25, Washington Township, the Long Run Oil Co. has a light pumper in the Big Injun sand at a test on the J. F. Allen farm. In Wayne Township, the Berea Oil & Gas Co.'s No. 3 on the James Hartshorn farm is dry in all sands.

In Section 20, Reading Township, Perry County, the Planet Oil Co. and others completed No. 4 on the S. B. Dittoe farm. The well responded with a production of 50 bbls. the first 24 hours after shot in the Clinton sand. In the southeast quarter of Section 24,

(Continued on Page 94)

Kentucky-Tennessee

By Vern T. Whitney

BOWLING GREEN, Ky., May 4.—Two wildcat completions in Greenup County, Kentucky, one a small pumper and the other a gas well; a dry hole in the Tinsley Bottom Field of Clay and Jackson Counties, Tennessee; a number of fair producers in Western Kentucky and a decrease in development work features the week in the Blue Grass State.

In Greenup County, Chenault and associates brought in the first commercial producing well credited to that county. It is several miles north of Grayson, Ky., on Tiger Creek, and is estimated at 6 bbls. natural from the Corniferous sand. Reliable authorities believe the new well will be the forerunner of a new field of considerable extent.

Ten miles to the north of the Chenault well, L. C. Young finished a gasser good for 50,000 feet of gas in the Corniferous sand on his T. B. Burke lease, on Tigert Creek, in a bend of the Ohio River, 70 miles from Ashland. In the vicinity of this well, the New Domain Oil & Gas Co., the Petroleum Exploration, the Rex and Pyramid, the Eastern Gulf and several other major companies have secured acreage which will be developed if other tests now drilling in the county prove satisfactory.

L. C. Young is moving a rig to drill on the Bennett heirs' tract, 2 miles south of the T. B. Burke, which according to L. B. Browning, former State geologist and discoverer of the Weir sand field in Johnson and Magoffin Counties, looks like likely oil territory. Mr. Young is also planning to drill on the Baglin farm in the same district. W. R. Jillson, State geologist, has announced he will immediately put down two tests on his property in Greenup County. Tom Hayes, of Louisa, Ky., is moving a rig to commence a well about 1 mile northwest of the Chenault well. Bill Foreman, who recently finished a duster on the Reuben Potter farm, on Leatherwood Creek, is moving to a location in the vicinity of the Chenault well. Thompson and others are spudding in a test on the Allen farm near the hamlet of Kehoe.

Greenup County is in the extreme northeastern corner of Kentucky, and up against the West Virginia State line.

Tinsley Bottom

The drilling of a dry hole on the Ben Hix farm, by DeGeve and associates, of Atlanta, was of much importance in defining the structure of the Tinsley Bottom Pool of Clay and Jackson Counties, Tennessee. This test, drilled 500 feet southeast of No. 1 Swan, which is a 25-bbl. well 200 feet below the Pencil Cave, topped the Cave at 131 feet lower than the Swan, showing conclusively that it was off structure.

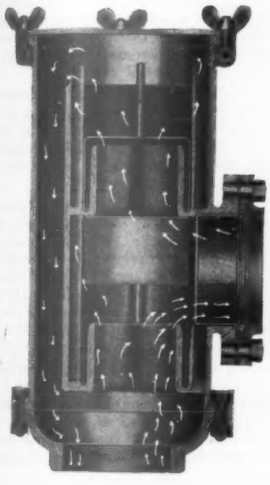
The Dafoes are now moving a rig to the Rogers farm, one-quarter of a mile to the southeast of the Hicks, where it appears the structure is again rising, and where a good producer is anticipated. The Hicks well was the first duster out of eight completions, but a dry hole was expected by most of the operators who were posted on conditions in the area.

Activity is increasing in this section of Tennessee as well as in adjoining counties. The Young Oil Co. has started No. 1 Adams, 2½ miles south of Celina, the county seat of Clay, and is moving tools to the Bailey farm at Bennett's Landing, 4 miles south of Celina and 3 miles north of Tinsley Bottom. Roape and others, of Ohio, purchased the Tinsley farm, one-fourth mile southeast of the producing Draper farm and are starting their initial test. Unknown parties have taken over 1,500 acres in the Roaring River section, several miles north of Gainesboro, in Jackson County, on which

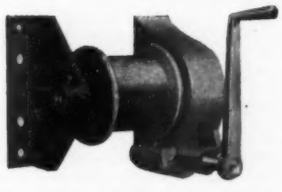
(Continued on Page 90)

You can't COOL the SUN!

But you can conserve your oil during the summer by equipping your tanks with WESTCOTT & GREIS TANK EQUIPMENT!



Liquid Safety Valve, the supreme warden of your oil. Non-sticking, non-corroding and has no seats to grind.



Safety Cable Winch gives full protection to operator. All parts properly housed.

Sheave Bracket has cable guide on top and another under deck to give perfect alignment to cable at all times.

Automatic Thief Hatch is automatic in operation and has two seats which insures absolutely tight deck openings.

Mechanical Gauge Hatch. A tight, well built gauge hatch for purposes where automatic thief hatch cannot be used due to construction of tank deck.

During the hot months of summer evaporation losses reach their highest figures—the time when you need Westcott & Greis equipment more than ever.

Every practical operator will see that his tanks have the *full* protection that this proven equipment affords, for every oil man knows that a properly equipped tank is a paying tank.

A double protection—that conserves your oil and makes your tanks safe from collapse and rupture is the only protection worthwhile buying. This is the kind of protection you get when you specify Westcott & Greis Equipment.

Address our company today, at the branch nearest you, for information.

WESTCOTT & GREIS

Sales Service

Dallas TULSA Los Angeles

Shreveport

126

Suppose your Tanks were filled with Gold—

WESTCOTT & GREIS

CONSERVATION AND SA

NATURAL GAS DEVELOPMENTS

CITIES OF SIX STATES SEEK UNIFORM RATES

PITTSBURGH, Pa., May 2.—A move to obtain the cooperation of six States in fixing uniform rates for gas consumers and eliminating unnecessary competition with a view to reducing the cost of production and distribution was made at a meeting of the Municipal Natural Gas Conference. Mayor William A. Magee, of Pittsburgh, chairman of the association, presiding.

A resolution was unanimously adopted, requesting the Public Service Commissions of Pennsylvania, Ohio, West Virginia, Maryland, Kentucky and New York to appoint representatives to a joint meeting for the purpose of formulating rules, regulations and practices for the conservation of gas and particularly to establish intercorporate relations and contracts between the producing, transmitting and distributing companies impossible now through State lines acting as barriers and the fact that gas rates are not subject to the Interstate Commerce Commission or Federal control.

The meeting developed that the organization has been carrying on extensive investigations of rates and other features of the natural gas industry with the result that the engineers report a lack of uniformity in rates and unnecessary competition which the resolution states "impose an unreasonable burden upon the consuming public."

As an illustration of varying rates in 30 municipalities scattered over Ohio rates range from 35 cents to $1.15 per 1,000 feet. In West Virginia, rates in 14 municipalities range from 20 to 50 cents, while in Pennsylvania, in more than 100 municipalities rates range from 30 cents to $1.

The meeting was attended by M. E. Spencer, city solicitor of Springfield, Ohio; H. R. Allenworth, city engineer of Columbus, Ohio; F. P. Zimpfer, councilman of Columbus, and C. L. Rose, councilman of Cincinnati, Ohio. The next meeting will be held in Cincinnati.

The resolution adopted follows:

Whereas, the Municipal Natural Gas Conference, representing the municipalities of Ohio, Pennsylvania and West Virginia, has been organized for the mutual benefit of gas consumers in these States, and

Whereas, the information now available to the conference shows that there is a lack of uniformity in rates and in types of rate schedules in the various States and that unnecessary competition exists resulting in an excessive drilling of wells and an excessive laying of gathering lines, and that as a result thereof there is a much greater investment on the part of the companies than is justified under all the circumstances, which imposes an unreasonable burden upon the consuming public, and

Whereas, gas rates are not now subject to the regulation of the Interstate Commerce Commission or to Federal control and the State lines operate as barriers to the powers of the local State commissions in their investigation and control of gas rates and of the inter-corporate relations between the producing, transmission and distributing companies, many of which are affiliated companies, so that the contract rates are not fixed at arms' length, and

Whereas, gas is not being conserved for its best and most appropriate uses;

Be it resolved that request be made to the Public Service Commissions of the States of Ohio, Pennsylvania, West Virginia, New York, Maryland and Kentucky that these commissions cooperate for the purpose of establishing uniform practices, rules and regulations with respect to rates and rate schedules, also to the end that unnecessary competition, both as to drilling of wells building of gathering lines, pumping equipment and transmission lines be eliminated, and also to the end that natural gas be conserved for its best and most appropriate uses; and the conference recommends to these commissions that to accomplish these purposes a commissioner be appointed from each commission to meet the representative from the other commissions so that uniform rules, regulations and practices may be adopted with respect to all of the above matters and particularly with respect to matters affecting the inter-corporate relations and contracts between the producing and transmitting and the distributing companies.

EXTENSIVE GAS COMPANY PLANS ARE IN PROGRESS IN SOUTH TEXAS

By P. L. McGreal

HOUSTON, Tex., May 4.—The Refugio Oil & Gas Co. has another gasser in No. 5, north of Woodville Refugio County, at 1,570 feet. It is 2½ miles north of the previous gas wells drilled by the Pratt-Hewitt interests, of Lincoln, Neb., which were taken over by the Refugio Oil & Gas Co. The latter is controlled by the Moody-Seagraves interests, of Galveston, which in turn are identified with the Simms Petroleum Co., one of the subsidiaries of the Stone-Webster Corp., of Boston. The Stone-Webster Corp. owns a number of public utilities in the Southwest, operating street railways, power companies and water plants.

There seems to be a hitch in the plans of the Houston Pipe Line Co., which was recently incorporated as a subsidiary of the Houston Oil Co. for the purpose of laying gas lines from Live Oak County to Houston and from Edna, Jackson County, to Gulf, Matagorda County where the plant of the Gulf-Texas Sulphur Co. is located. The proposed line from Live Oak County would be about 220 miles and from Edna to Gulf approximately 60 miles. The Houston Oil Co. has five shut-in gas wells in Live Oak County and is now drilling two west of Edna, a gas belt.

The original plan was to furnish gas to industrial concerns only. At the same time the Moody-Seagraves-Stone-Webster combination announced a gas line would be laid from Refugio County to Houston and Galveston to furnish gas for domestic consumption. The Moody-Seagraves interests now have small lines from Sinton to Corpus Christi. They have also applied for franchises in Victoria and other towns between Houston and the gas districts to the southwest.

Two gas lines would be financial suicide and it is now believed the various interests mentioned are working on a plan of consolidation. Nothing definite can be learned from local representatives of the various interests involved in the proposed lines.

Use Louisiana Gas

It is reported the Magnolia Gas Co. will lay another line from North Louisiana to Beaumont. The company is now supplying the refinery of the Magnolia Petroleum Co. with approximately 45,000,000 feet per day from northeast Texas and North Louisiana. The present line has a capacity of 50,000,000 feet per day. The new line will supply gas to other refineries and industrial concerns in the Beaumont-Port Arthur district. The present line is welded, consisting of 16, 18 and 20-inch pipe and is the first welded line of that size in the country. The loss is very small, being a fraction of 1 per cent due largely to defective welding rods.

Two years ago J. S. Cullinan, of Houston, former president and organizer of The Texas Co. and now controlling factor of the Republics Corp., had a survey made for a proposed gas line from the Monroe (La.) gas district to Beaumont and Port Arthur, but the project was dropped. Mr. Cullinan's engineers also made a survey of the Monroe gas area.

The Booth interests, of Youngstown, Ohio propose another gas line from Webb County to Sn Antonio to furnish industries in that city with fuel. The Southern Natural Gas Co., organized by the late M. M. Sweeteman, has a line from the gas districts in Live Oak-McMullen Counties to the city limits of San Antonio. The gas is distributed for domestic consumption only by the Public Service Corp. there. The gas districts in Webb County are near Bruni, in the eastern part of the county, and in what is known as the Caroline-Texas territory. The Border Gas Co. is taking some of the Caroline-Texas supply to augment that from its own wells, piping it to Laredo and Nuevo Laredo on the Mexico side of the Rio Grande River. The mayor of San Antonio has employed gas engineers to make an investigation and report to the city commissioners. The Webb County wells will be measured and a survey made of the possible consumption by San Antonio industries.

The present supply has been inadequate in cold weather. The gas is purchased from producers in the shallow gas sand sections of the counties mentioned, located about 85 miles south of San Antonio. The producers say the price received from the Southern Natural Gas Co. is too low to justify any vigorous drilling campaign.

Coastal Gas Difficulties

The oldest natural gas company in south or southwest Texas is the Border Gas Co., a subsidiary of The Texas Co., of which Dr. M. P. Cullinan, of Laredo, is the executive. Dr. Cullinan is ranked as one of the natural gas experts of the country, having had a wide experience in the old Eastern gas field in North Louisiana before locating Laredo. The Border Gas Co. has been operating about 18 years, first getting its gas from the old Reiser gas district in Webb County, then from wells on the Jennings ranch in that county.

Handling natural gas in the Coastal Plains belt is not a commercial proposition and is not considered feasible. In the first place the gas contains sulphur. Next it is in such volume it would be difficult to control. Once the bit punctures the gas reservoirs it "blows out" with tremendous force, demolishing the derrick and throwing the drill pipe, sand, gravel and water from the hole to a height of 150 feet or more. The gas is allowed to blow until it exhausts itself or when the pressure lessens it is "mudded" off, the hole cleaned, if it is possible, and drilling resumed. Often the earth about the hole collapses, forming a crater into which the rotary sinks if it has not been removed.

Kingsville, in Kleberg County, a town on the famous King ranch of 1,000,000 acres, is supplied with natural gas from wells 8 miles to the southeast, but the supply is not always satisfactory. The gas sand is found around 2,800 feet.

North Texas cities and towns are supplied with natural gas by the Lone Star Co., but the formations are like Oklahoma and the gas can be held in reserve. by shutting in the wells.

MEXICAN PIPE LINE

Huasteca Petroleum Co., has completed one section of its third 10-inch line from Mendez, San Luis Potosi, into Tampico. The section from its pump station No. 2 on Lot 1, Cacalilao, to Tamos has been tested and passed by Government petroleum inspectors, and is ready for use in case the company decides to increase its withdrawals.

COMPETITION IN GAS KEEN IN LOS ANGELES

LOS ANGELES, Cal., May 2.—What parts of Los Angeles each shall serve with industrial gas without competition from the other has become a matter of acute discussion between the Los Angeles Gas & Electric Corp. and the Southern California Gas Co.

Representatives of the two informally have laid their sides before representatives of the State Railroad Commission, but that body has asserted lack of jurisdiction and the companies are left to work out the problem by themselves.

The companies have an understanding as to what parts they may serve with domestic gas without competition—but there is question as to division of territory for industrial gas service.

Recently the Southern California company began laying a line in a territory heretofore served exclusively by the Los Angeles corporation with domestic gas and the question arose as to competition in that territory.

Until recently the Los Angeles corporation served only domestic gas, a mixed natural and artificial gases product. It procured its natural gas from the Southern California company. The Southern California company serves both domestic and natural gas, the latter being used for industrial purposes.

Last fall the Pacific Lighting Corp., which is the parent holding company of the Los Angeles corporation, by a stock deal acquired control of the Southern Counties Gas Co. of California, which provides some of the outlying parts of the city with both domestic and industrial gas.

The Southern Counties company is laying a line to bring natural gas from the Ventura Field to Los Angeles and the Los Angeles corporation is to take its surplus.

How much this will affect the gas sales of the Southern California company to the Los Angeles corporation is problematical, but it will enable the Los Angeles corporation to compete with the Southern California company in the industrial field.

At the San Francisco conference over allocation of the city for industrial service on a non-competitive basis were President Brundige of the commission; Paul Overton, general counsel, and Harry L. Masser, gas engineer for the Los Angeles corporation; T. J. Reynolds, counsel, and Alexander B. Macbeth, general manager for the Southern California company.

The companies hope to settle the problem by negotiations between themselves.

The Southern Counties Gas Co., which has contracted for virtually all the gas produced by the large companies in the Avenue Field at Ventura, is constructing a system of 20-inch gathering pipe line to cover the entire field. The line will connect the company's compressor plant, about three-quarters of a mile north of the town of Ventura, with all the producing properties to conduct the gas from the wells to the plant.

The compressor plant is said to be one of the largest in the State, with 12 compressors at present in operation, and room for six more. When all the compressors are installed the plant will be the largest in the State, according to oil men. The Ventura plant will furnish the motive power for boosting the gas from Ventura through the pipe line to Los Angeles. Altogether the Southern Counties Gas Co. contemplates the expenditure of between $1,000,000 and $2,000,000 to handle the gas in the Avenue Field.

You Can't Afford to Take Chances

The tremendous pressure that continually bombards your well-settings make it absolutely imperative that your heavy duty valves be capable enough of withstanding strain.

Tough Ilmenite Steel construction throughout—the rigid twenty-four hour kerosene test to which it is subjected make the KEROTEST Cast Steel Valve fully able to bear the responsibility of the most severe oil field service.

Each individual valve is carefully tested before shipment and a certificate assuring its perfect construction is given.

Your well or pipe-line needs the KEROTEST to guarantee maximum safety.

Our descriptive catalog will give you complete details.

Pittsburgh Reinforced Brazing AND Machine Co.

Pittsburgh, ... Penna.

Carried in stock and sold by

GRINNELL COMPANY OF THE PACIFIC
Los Angeles San Francisco

NORVELL-WILDER HARDWARE COMPANY
Houston Beaumont Shreveport

OIL WELL SUPPLY COMPANY
Oklahoma Kansas Colorado Wyoming

Export Distributors
OIL WELL SUPPLY COMPANY
Pittsburgh New York Tampico London

VALVES KEROTEST FITTINGS

REGISTERED U.S. PAT. OFF.

MEN KNOWN IN OILDOM

W. C. Newman

Twenty years of consistent and persistent work in the Okmulgee district of Oklahoma has given to William C. Newman, of Okmulgee, Okla., a standing as one of the leading operators in the east central Oklahoma fields. He has the distinction of having had a leading part in opening up some of the most prolific oil pools in Okmulgee, Okfuskee and Hughes Counties. Mr. Newman owns the controlling interest in the Mitchell Oil Company, one of the oldest operating companies in the Okmulgee district and one of the first to develop production in the fields southwest of Okmulgee. The Mitchell company opened up the Tiger Flats area in Township 12-12 more than 10 years ago and still has a substantial production on its leases there. Mr. Newman drilled the first hole in the vicinity of the Deaner Pool, in Township 11-11—a dry hole—in 1916, and later joined interests with the Kingwood Oil Company in developing extensive acreage held by Mr. Newman in this pool. He also drilled one of the first producing wells in Hughes County, in 31-8-12, more than two years ago and this well is still a good producer. Mr. Newman is a director and one of the larger stockholders in the Kingwood Oil Company, of Okmulgee; a director of the American National Bank and is interested in other business enterprises in his home city. He is married and has two children.

Mr. Newman was born and spent his boyhood in Hoosick Falls, New York. He graduated from the law school of Boston University in 1904 and came to Okmulgee in the same year. He practiced law for about a year in Okmulgee and has devoted himself entirely to the oil business since 1905.

PERSONAL PARAGRAPHS

Frank J. Katz, of the United States Geological Survey at Washington, was a Tulsa visitor last week.

* * *

F. O. Young, manager of sales for National Tube Company, was in Casper, Wyo., recently on business for his company.

* * *

Charles Markey, of the Link-Belt Company, of Indianapolis, Ind., is making a trip through the Mid-Continent Field.

* * *

John Reid, vice president of the Joseph Reid Gas Engine Company, of Oil City, Pa., was in Tulsa in the interests of his concern.

* * *

A. D. Aitken of Denver, Colo., vice president of the Mountain & Gulf and Midwest oil companies, was in Casper, Wyo., recently.

Miles S. Reed is moving from Langdon, N. D., to Kevin, Mont.

* * *

M. H. McClellan is leaving Salinas, Ecuador, S. A., for Eminence, Mo.

* * *

C. R. Hudson, of the Mexican Petroleum Corporation, left Buenos Aires recently for the United States.

* * *

John R. Phillips, representative of the Worthington Pump & Machinery Company, of Buffalo, N. Y., spent a week in the Tulsa territory.

* * *

Capt. H. H. Roberts, geologist, is back in San Antonio from a trip to Bastrop County, where he spent two weeks examining properties.

* * *

Sir Henri Deterding, managing director of Royal Dutch-Shell Company, said the board does not intend to increase proportion of English members.

* * *

Robert L. Armitage, formerly with the Kunkle Valve Company, has joined the force of the Murray Tool Company, succeeding Frank W. De Luce.

* * *

John D. Barnett, of Denver, Colo., president of the Mountain Producers and Wyoming Associated oil companies, was in Casper, Wyo., recently.

* * *

E. K. Soper, with the Sinclair Oil Company, who has been in Europe for the last eight months on professional business, has returned to New York.

* * *

L. A. Stevenson and E. B. Holmes of Petrolia, Ont., have returned from Persia, where they spent three years for the Anglo-Persian Oil Company.

* * *

W. L. Connelly, of the Mammoth Oil Company, left on a business trip to New York the past week and expects to be back in Casper in a week or two.

* * *

H. C. McCoy, of Cleveland, Ohio, representative of the Chisholm-Moore Manufacturing Company, makers of chain hoists, trolleys and cranes, was a visitor in Tulsa last week.

* * *

John M. Carson, sales manager for the Cosden Sales Corporation, has returned to Chicago after spending the greater part of last week at the Tulsa office of the company.

* * *

W. R. Quinn, former manager of the Fuel Oil Department of the Combustion Engineering Corporation, has been appointed Pacific Coast agent with headquarters in San Francisco.

* * *

O. E. Dougherty, general superintendent of the Mammoth Oil Company, has returned to Casper, Wyo., from a trip to the Smackover Field where he is interested in some oil and gas leases.

* * *

George H. Brink, of Bradford, Pa., representing the Bradford Motor Works, manufacturers of "Tex" pumps, has been transferred to Tulsa, and will look after the Texas business for that company.

* * *

W. E. Dunlap, for many years connected with the geological department of the General Petroleum Company, is to be associated in a like capacity with the United Oil Company, and the Richfield Oil Company.

* * *

J. J. Taxman, former head of the Taxman Refining Company, has been in New York City in connection with matters relating to the modern hotel which he and his associates are building in Kansas City.

* * *

Morgan H. Fowler, general manager of sales for the Fairbanks Company of New York, is making a trip through the Mid-Continent Field accompanied by George Humphries, district sales manager, of St. Louis.

* * *

George W. Crawford, president of the Ohio Fuel Corporation and the Penn Mex Fuel Company and vice president and director in numerous other companies, has returned to Pittsburgh, Pa., after spending the winter in the Sunny South.

* * *

Dr. Justus H. Cline, head of the geological and land department of Derby Oil Company, Wichita, Kans., has completed a survey of the possibilities of the Amarillo oil field from the standpoint of oil production, refining, pipe line and marketing.

* * *

W. K. Evans, Chicago manager for the Roxana Petroleum Corporation, has just returned to Chicago from a visit to all the company's stations in Michigan and Wisconsin. He reports the consumption of gasoline in those States as growing by leaps and bounds.

* * *

H. E. Neubauer, formerly assistant chief engineer of the Buffalo Foundry & Machine Company, later vice president of O. S. Sleeper Company, Inc., has become associated with the Chemical & Vacuum Machinery Company, Inc., of Buffalo, N. Y., as chief engineer.

* * *

Calvin H. Gass, geologist, formerly with the Midwest Company, at Casper, Wyo., is reported recovering from injuries received in an automobile collision on the Lovington Highway, near Carlsbad, N. M., in which Albert R. Meyer, Tacoma, Wash., geologist, who accompanied him, was killed.

* * *

Chief Petroleum Engineer F. B. Tough, of the Bureau of Mines, was in Casper, Wyo., on a trip of inspection. He was accompanied by E. P. Campbell, supervisor of the Rocky Mountain district and the party was met in Denver by J. W. Steele, deputy supervisor of the Wyoming and Montana district.

* * *

Frank W. Clark has resigned as secretary-treasurer of the Oil States Petroleum Company, Inc., of New York, and has established an oil brokerage business of his own. For several years he was associated with the White Oil Corporation, both in export and domestic sales divisions.

* * *

E. E. Kendall, of The Deming Company, manufacturers of pumps, of Salem, Ohio, is in the Mid-Continent territory arranging for better representation and service for the company's products. He plans to establish a direct connection between the company and users of Deming pumps in the Mid-Continent.

* * *

B. A. Thompson, vice president of Bankers Trust Company, New York; Alanson G. Brown, president of Hamilton-Brown Shoe Company, and David Hannah, of Houston, Tex., have been elected directors of Houston Oil Company to fill three of the four vacancies caused by the resignations of Edwin G. Baetjer, A. H. S. Post, D. G. Geddes and H. B. Lake.

* * *

Sir Charles Greenway, chairman of the Anglo-Persian Oil Company, has returned to London from Buenos Aires, where he was engaged in negotiations with the Argentine Government. Sir Charles said he was greatly impressed with the remarkable progress and development of the Argentine and the energy and wealth of its people, but was somewhat disappointed by the attitude adopted by the Argentine Government towards foreign capital engaged in the exploitation of its oil fields.

* * *

Alvin Zwerneman, factory representative at Dallas, Tex., for the Axelson Machine Company, has been transferred to Tulsa, Okla., and will handle the territory from Tulsa south that was formerly covered by L. C. Harbert, who has joined the J. P. Rattigan organization. Mr. Zwerneman will be succeeded at Dallas by D. M. Hammett, formerly factory representative of the Axelson company at Houston. A. A. Dill joins the Axelson concern as factory representative at Houston.

* * *

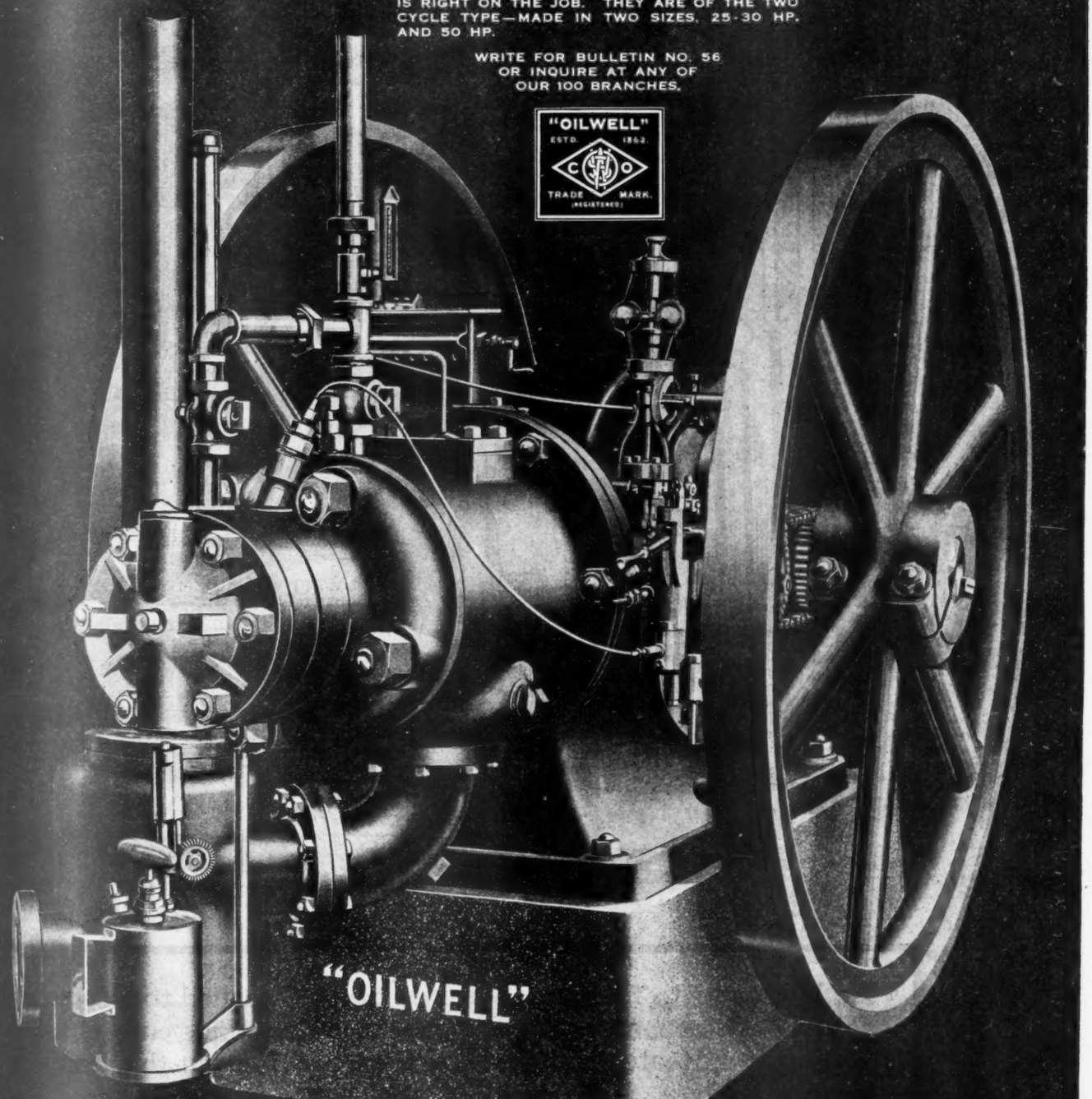
J. H. Jenkins, for three years in charge of the land and geological department of the Tidal Oil Company in Texas, with headquarters at Fort Worth, has been elected vice president. While Mr. Jenkins' election as vice president will not change his work materially, the scope of his duties will be broadened. Mr. Jenkins has been with the Tidal five years, the last three of which has been in Texas. The announcement of the election was made following a visit of E. L. Shay, of New York, vice president of the Tide Water Oil Company; L. F. Bayer, of Tulsa, vice president of the Tidal Refining Company, and E. H. Salrin, vice president, to Fort Worth.

"OILWELL"
HEAVY DUTY OIL ENGINES

THE ALMOST BRUTE CONSTRUCTION AND THE EVER READY PERFORMANCE OF "OILWELL" HEAVY DUTY OIL ENGINES MAKES THEM HIGHLY DESIRABLE FOR THE GRUELLING SERVICE ENCOUNTERED IN THE OIL FIELDS. THE FACT THAT THEY WILL RUN ON CRUDE OR FUEL OIL IS ANOTHER RECOMMENDATION BECAUSE THE FUEL IS RIGHT ON THE JOB. THEY ARE OF THE TWO CYCLE TYPE—MADE IN TWO SIZES, 25-30 HP. AND 50 HP.

WRITE FOR BULLETIN NO. 56
OR INQUIRE AT ANY OF
OUR 100 BRANCHES.

"OILWELL"
EST'D. 1862.
TRADE MARK.
(REGISTERED)

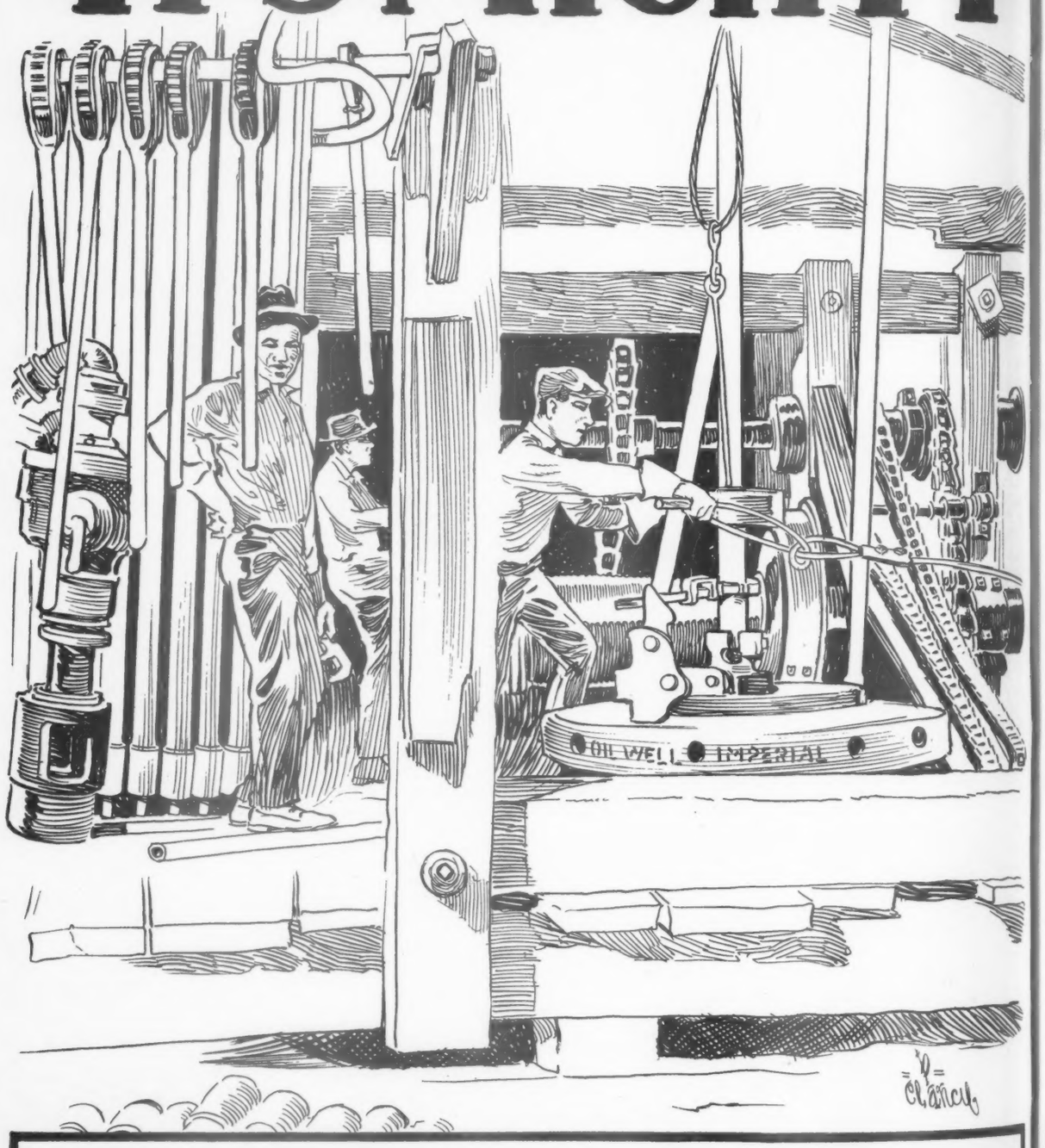


OIL WELL SUPPLY CO.

NEW YORK—LONDON—TAMPICO—PITTSBURGH, U.S.A.—SAN FRANCISCO—LOS ANGELES

WORLD'S OLDEST AND LARGEST MANUFACTURERS OF OIL FIELD EQUIPMENT

IT'S MIGHTY



No lubricator to fool with—reamer collar threaded to fit your drill collar—a detachable head and perfect ease in making cutter changes. These are the features of the Reed Rock Bit that put this tool in a class by itself.

WORLD'S OLDEST AND LARGEST MANUFACTURERS OF OIL FIELD EQUIPMENT

HANDY

REED ROLLER BIT COMPANY

New York HOUSTON Los Angeles

EQUIPMENT AND SUPPLIES

WILL ASK REVISION OF PITTSBURGH RATES

PITTSBURGH, Pa., May 2. — A drastic change from the new rail rates on iron and steel products which will be put into effect in the two principal steel-producing centers, Pittsburgh and Chicago, as a result of the Interstate Commerce Commission's recent decision, will be asked of the commission by steel manufacturers when their plea to have the case reopened is presented.

While Pittsburgh and Chicago steel makers are directly affected by the commission's order, which in substance provides for a decrease of 2 cents from the 43-cent rate per 100 pounds, now in effect from Pittsburgh to St. Louis, and an increase of 7 cents to the 17½-cent rate now effective from Chicago to St. Louis, steel men from all other points, which include Youngstown, Johnstown and Buffalo, are also interested, for it is the general belief that future decisions on short haul rates will be based on the present ruling, which provides for commutation of rates on a mileage basis.

Instead of a decrease of 2 cents in the Pittsburgh-St. Louis rate, or about 5 per cent, a decrease of 20 per cent from the 43-cent rate will be asked, and instead of an increase of 7 cents in the Chicago-St. Louis rate, or approximately 40 per cent, an increase of only 25 per cent on the 17½-cent prevailing rate.

TO MAKE RED WOOD TANKS

OKLAHOMA CITY, Okla., May 2.—The Drane Tank Co. of Texas is installing a plant at Holdenville for the manufacture of wooden tanks, making an investment there of about $50,000. Red wood from California is being used. About 30 men are to be employed. Hugh Dane, vice president of the company, is in charge. E. M. Woody of Holdenville is secretary-treasurer.

OIL COUNTRY GOODS STILL HOLDING; PIPE MILLS OPERATING AT 70 PER CENT

By B. E. V. Luty

PITTSBURGH, Pa., May 4.—Buying of steel has decreased farther in all lines and is perhaps averaging not more than 50 per cent of capacity. Generally speaking there is no evidence that consumption of steel has decreased, the lighter buying being ascribed to buyers having become still more conservative, chiefly on account of observance of the weakness in prices, while those that have stocks are strongly disposed to liquidate as rapidly as possible. Not all have stocks, by any means. In bars, shapes, wire products and sheets prices have weakened by an average of about $2 a ton in the past week or ten days, and this is rather important since the lines mentioned represent about one-half the total steel output.

Bars and shapes are now quotable at 2.00c to 2.10c, f.o.b. mill Pittsburgh district, for the general Pittsburgh territory, or at the same range as plates have been quotable at for several weeks. However, this does not necessarily foreshadow a continued trend downward, for just now some mills have decided to make a strong effort to get their price on the three products back again to 2.10c as minimum. They have no particular assurance that they will succeed, but they realize they must keep up a contest or prices will continue to drift downward indefinitely.

Shading Wire Prices

The shading in prices of wire products recently spread to such an extent that the American Steel & Wire Co. made a formal reduction. This puts nails back to the $2.75 price that ruled last November. Late in November there was an advance to $2.85 and early in February a second advance, to $2.95, other wire products being kept at regular differentials from nails. In a few weeks the second advance was lost and now the first advance is lost, leaving wire products approximately at the low point of last year.

Independent sheet mills have been shading more extensively and the minimum of the market is down $2 a ton on blue annealed, black and galvanized. The American Sheet & Tin Plate Co. adheres to its old prices on black and galvanized while it has receded $2 a ton on blue annealed, the market being now quotable at 3.30c to 3.50c for black, 4.40c to 4.60c for galvanized and 2.50c to 2.60 for blue annealed.

Bars, shapes and plates even with recent declines are above their low point of last year, while sheets are below last year's low point.

It remains the case that rails, tin plate and pipe, including oil country goods, have had no decline from prices reached in the last general advance, when ended a little over two years ago, except for such declines in delivered prices as occurred through abandonment of the Pittsburgh plus system.

Tubular Goods

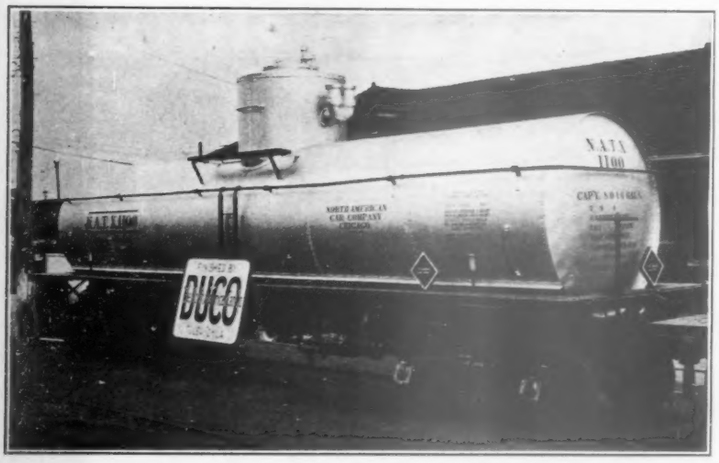
Naturally buyers of tubular goods are cautious in making commitments and in carrying stocks, for they realize that the maintenance of prices for two years is no proof of what will occur in future. Mill prices are perfectly rigid, each mill being punctilious in this matter, realizing that any irregularity would be likely to start something. In the secondary market, jobbers here and there are making some concessions to move certain sizes and reduce stocks, but prices in general are steady in the secondary market also.

Pipe mills continue to operate at about 70 per cent, their high point having been a rate of about 90 per cent, in February. Incoming business seems to be nearly or quite sufficient to maintain a 70 per cent rate, but if it should prove deficient the mills would probably make up some stocks, as their stocks thus far are not particularly large.

The steel industry as a whole is running at between 70 and 75 per cent, against an average of 90 per cent during the first quarter of the year. Production then ran above consumption and in the course of time it will have to run correspondingly below consumption, to equalize.

Pig iron, coke and scrap are all stagnant and show no change in quotable prices.

OIL FIELD TANK CARS PAINTED WITH DUCO



The first oil field tank cars ever to be finished in "Duco" were exhibited at Tulsa, Okla., during the recent convention of the Association of Natural Gasoline Manufacturers. Prior to that time this product of the E. I. DuPont De-Nemours Co. has been used on tank cars only that are employed by the company in the transportation of nitrates and other chemicals between its various plants in the East.

The cars were painted at the Tulsa plant of the North American Tank Car Co., under the supervision of H. H. James, who is in charge of the "Duco" business in Tulsa.

Duco is well known, particularly in the automobile business, and is used extensively by railroads throughout the country. It was recently adopted as standard equipment on engines and tenders by the Frisco Railroad.

The DuPont company claims that on account of the peculiar qualities of Duco, it is free from chemical disintegration of its own origin, and can be damaged only by mechanical injury and erosion. Duco can be applied only by spraying, and is dry in 30 minutes after application. The DuPont company does not handle equipment for applying Duco, but confines its sales in this matter to the product itself.

BOOKLET DESCRIBES PRODUCTS

The Rock Island Plow Co. has issued a new booklet illustrating its oil field equipment. In this department, the special feature of the Rock Island Co. is the tractor winch No. 70, which is designed to cut the cost of pulling rods and tubing. The winch is backed up to the well, and eliminates the necessity of bull wheels, as the tubing is pulled directly over the drum of the machine. A feature of the tractor winch is the large brake bands and brakes which easily control the operation of the drum.

RUSSIA BUYS EQUIPMENT

The Foster-Hoefer Corp. announces the shipment of four crates of Hancock working barrels to the Russian Government, the order amounting to approximately $2,000. This follows a shipment to the Russian Government, about ten days ago by the same company, of H. M. A. long stroke pumps.

RUBBER COMPANY OPENS KANSAS CITY BRANCH

The Murray Rubber Co. of Trenton, N. J., has opened a direct factory distributing branch at Kansas City to serve its trade in the West and Southwest territory.

A complete stock of quality mechanical rubber goods, tires and tubes are carried

L. E. McCune

at that point for distribution to Murray distributors.

Murray representatives will operate out of the Kansas City district offices in place of from the factory at Trenton, New Jersey.

R. M. Stuart, general manager of the mechanical goods division of the company, has placed L. E. McCune in charge of the Kansas City branch. Mr. McCune is widely and favorably known throughout the West.

LARGE TIN PLATE ORDER

The Standard Oil Co. of New Jersey has placed orders for approximately 500,000 boxes of tinned plate, which at current prices will cost about $2,750,000. This is the largest order for tin plate placed in many months. The plate will be used in the manufacture of tins, chiefly for the export trade of the company. It is understood about half, or 250,000 boxes of 100 pounds each, will be supplied by the American Sheet & Tin Plate Co. of the United States Steel Corp., while the balance will be supplied by various independent steel companies.

DIESEL ENGINE ORDERS

The following orders have just been taken by the De La Vergne Machine Co., for Diesel oil engines:

Andian National Corp., Ltd., for their new pipe lines in Colombia, S. A., twelve 200 horsepower twin horizontal "SI" Diesel oil engines. This order was secured in competition with eight European builders of oil engines.

Magnolia Petroleum Co., Houston, Tex., one 350 horsepower type "SI" Diesel.

Thompson Ice Co., Key West, Fla., one 150 horsepower and one 65 horsepower Diesel oil engine.

El Reno Ice Co., El Reno, Okla., one 100 horsepower Diesel oil engine.

Municipal plant, Wetumka, Okla., two 200 horsepower vertical Diesel engines.

Central Commercial Co., Cuba, two 130 horsepower vertical Diesel engines.

Oil Field Supplies And Complete Field Equipment

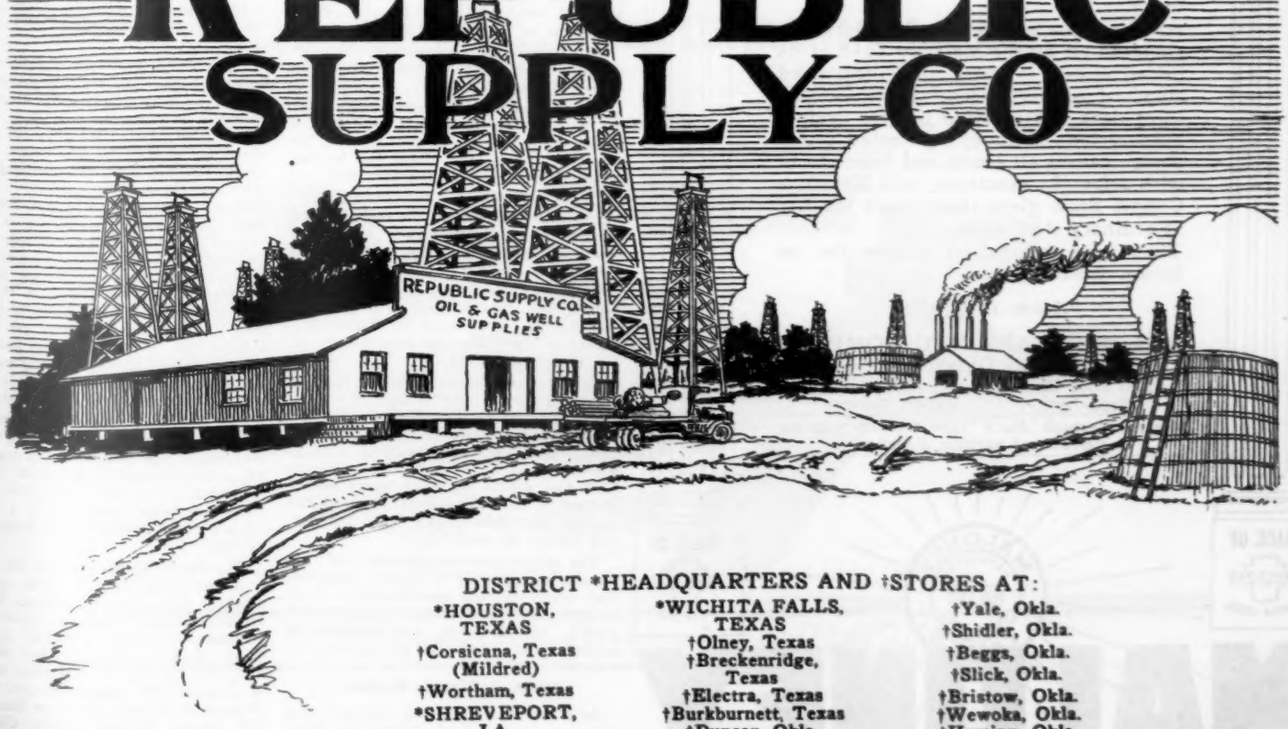
Both Rotary and Cable

Including:

Republic Iron & Steel Co.'s Tubing, Casing, Drive and Line Pipe.
Standard Seamless Tube Co.'s Seamless Upset Rotary Drill Pipe and Casing.
American Well & Prospecting Co.'s "Gumbo Buster" Rotary Equipment.
Jones' Acme Sucker Rods, and Gas Engines.
American Steel & Wire Co.'s and Broderick & Bascom's Wire Rope.
Hughes Tool Co.'s Hughes Rock Bits, Hughes Disc Bits, and Hughes "Acme" Tool Joints.
Bovaird & Seyfang Oil Field Boilers.
Wall (Walk Laid) Bull Ropes and Manila Cables.
Rhodes Master Packing.

In Stock Always

REPUBLIC SUPPLY CO



DISTRICT *HEADQUARTERS AND †STORES AT:

*HOUSTON, TEXAS
†Corsicana, Texas (Mildred)
†Wortham, Texas
*SHREVEPORT, LA.
†El Dorado, Ark.
†Smackover, Ark.

*WICHITA FALLS, TEXAS
†Olney, Texas
†Breckenridge, Texas
†Electra, Texas
†Burkburnett, Texas
†Duncan, Okla.
*Tulsa, Okla.
†Tonkawa, Okla.

†Yale, Okla.
†Shidler, Okla.
†Beggs, Okla.
†Slick, Okla.
†Bristow, Okla.
†Wewoka, Okla.
†Hominy, Okla.
†Okemah, Okla.
†Wilson, Okla.

IN THE
HALL OF FAME

The importance of the Maloney engineers' contribution to the Oil Industry, in designing the original bolted steel tank, can only be measured by judging it by other makes of tanks on the market today.

After a lapse of over twelve years, the standard set by the Maloney Tank at its introduction, is still the recognized standard of perfection. Maloney gas-tight deck construction insures against evaporation; Maloney's patented crimp design causes all seams and joints to fit with scientific exactness; and Keystone Copper Steel gives them twice the life of ordinary steel tanks.

These are the honest claims for an honest product.

"Alone in Quality"

MALONEY TANK MFG. COMPANY
Tulsa, Oklahoma
12 to 3,000 Bbls. Capacity — Prompt, Dependable Export Service

We now furnish "Buck" type vacuum-pressure valves and vacuum Breakers

205

MADE OF KEYSTONE COPPER STEEL

MALONEY PATENTED BOLTED COPPER-STEEL TANKS

MADE OF KEYSTONE COPPER STEEL

MALONEY
'ALONE'

PROGRESS IN STANDARDIZATION SHOWN IN REPORT AND MINUTES

The following report and minutes of meetings in regard to standardization have been issued by the American Petroleum Institute:

The committee on slush pump standardization has confined its attention to the water end only as the parts making up this end are subject to most rapid wear and require more frequent renewals than the steam end.

Two sizes have been discussed, but the discussions below apply to the 5¾-inch; however, it is the idea of the committee that the general scheme as outlined shall be followed in working out the details of a larger pupm.

The committee recommends that:

Piston rods should be made alike within the tolerances now allowed in the manufacture of such parts, that is, the diameter, length, diameter and pitch of threads where it screws into crosshead, taper where it fits piston and the nuts that hold piston in place.

The stuffing box for these rods to be for ½-inch packing. Packing space in pistons ½ inch by 2⅞ inches. Liners and their packing to be held in place by four bolts screwed into and through cylinder heads.

Cylinder heads to have same number and size of bolts, also the same diameter of bolt circle.

Valve seats to fit a taper hole whose greater diameter shall be 5 inches. Taper of seats to be 1 inch in diameter per foot.

By making valve seats alike where they fit the valve decks and slight changes in the space around or above the valves, all makes of valves and seats would then be interchangeable.

Suction openings to be 6-inch and discharge openings 3-inch.

The changes contemplated are in dimensions and not form of parts.

Standardization of Derricks

The Texas sub-committee on standardization of derricks wishes to recommend that three heights be adopted as what will be commonly known as drilling derricks, the heights to be 90 feet, 114 feet and 122 feet; the base for all three heights to be 24 feet over all.

This committee recommends that the opening in the top of the derricks be 4 feet, 6 inches inside.

The committee also recommends that the first girt of the derrick be 8 feet, 6 inches from the top of the floor to the first girt, or 10 feet from the bottom of sill to the center of the first girt.

The committee also recommends that all operators have built on each drilling derrick what is commonly known as safety-first platform at the fourble board and at the top of the derrick.

This committee recommends a 66-foot derrick with 20-foot base as a pumping derrick, this to be used in shallow districts, or other districts where a pumping derrick is desired.

In recommending a 90-foot derrick for a drilling derrick, the committee had in mind especially the Coastal district, where it is necessary to redrill old wells from time to time, and especially in fields where the oil is produced from 2,000 to 3,000-foot depths. In fields where deeper drilling is done the committee is of the opinion that either 114 or 122-foot derrick should be used.

The above recommendations are for wooden derricks. It is hoped, however that steel derrick manufacturers will adopt the specifications recommended herein, should these specifications be passed by the American Petroleum Institute.

Oklahoma-Kansas Meeting

At a conference between representative operators and manufacturers in Oklahoma and Kansas territory on the standardization of rigs and derricks considerable discussion was had on the entire subject. The culmination of this discussion was a rescinding of the previous adoption and final adoption as follows: For steel derricks: Height 82 feet, base 20 feet, center to center, crown block 5-foot opening.

For Turnbuckle or wood leg derricks: Height 82 feet, base 22 feet, outside measurement, or 20 feet, 8 inches clearance measurement, crown block 5-foot opening in the clear.

A vote on the following specifications resulted in their adoption unanimously by both producers and manufacturers present.

For the deep rotary drilling, the California standard type derrick, height 122 feet, base 24 feet crown block 6 feet, 6 inches, or 6 feet in the clear. For shallow rotary drilling height 96 feet, base 22 feet, crown block 5 feet in the clear.

TO SPEND $15,000,000 ON COLOMBIAN LINE

In connection with the public offering of $10,000,000 first mortgage 15-year 6 per cent sinking fund gold bonds of the Andian National Corp., Ltd., which were sold soon after the subscription books were opened by Jesup & Lamont of 26 Broadway, New York, details of the proposed operations of this company were made known.

The company has a concession from the Colombian Government for the laying of a 350-mile pipe line paralleling the Magdalena River from Cartagena Harbor to the producing oil fields in that country. The company also has a concession covering harbor facilities at Cartagena, giving to it the exclusive right to operate wharves, warehouses and other terminal facilities in the harbor. The company already owns all wharves and warehouses now operating in the harbor and 19 miles of harbor front property. The proceeds from the sale of the bonds, together with $5,000,000 raised from the sale of common stock, will be used for the laying of the pipe line and harbor improvements.

In connection with the financing and the laying of the pipe line, the announcement said:

"The Tropical Oil Co. (which will be served by the pipe line) is developing a concession covering 2,000,000 acres in the Republic of Colombia; the time elapsed since its acquisition has permitted the exploration of only a small part of this concession, but competent geologists have estimated the potential production of such explored portion at more than 70,000,000 bbls. The present production is at the rate of about 6,000,000 bbls. per annum and drilling is being conducted at a rate which indicates a production of some 10,000,000 bbls. per annum at the earliest date at which adequate transportation to a seaboard terminal can be provided. The Tropical Oil Co. has up to date expended in development work and in laying foundations for large future development in excess of $20,000,000.

"In addition to serving the areas now being opened by the Tropical Oil Co., the company's pipe line will tap practically all present potential petroleum areas in Colombia in which development operations are being conducted by a number of important American and British companies."

The Board of Directors of the Andian National Corp., Ltd., is made up of Sir Herbert Holt, president Royal Bank of Canada; Hugo Baring, London; Sir Augustus Nanton, president Dominion Bank, Toronto; J. C. Donnell, president Ohio Oil Co.; G. W. Carpenter of Jesup & Lamont; W. Maurice Boyer, director Banque de Parie et des Pays Bas, Paris; Dr. Carlos Urueta, former Colombian Minister to the United States; G. Harrison Smith, president International Petroleum Co., Ltd.; C. E. Neill, general manager Royal Bank of Canada; D. O. Towl, Toronto.

Just what the name implies!

LUNKENHEIMER "RENEWO" Valves

When you buy Lunkenheimer "Renewo" Valves you are doubly insured against all the unfavorable conditions to which bronze valves for pressures up to 200 or 300 pounds, 500° F., are customarily subjected.

First—The "Renewo" will outlast other valves before repairs are necessary.

Second—When the severe service demands of modern power plant practice finally necessitate repairs, any part of the "Renewo" can be replaced at a fraction of the cost of a new valve.

Nickel seat and disc are regularly furnished, but when the valves are used for throttling purposes, these parts are of special design and are made of monel metal.

Seating surfaces are regrindable and the valve can be repacked under pressure when full open.

Interesting descriptive literature will be sent on request.

VISIT OUR EXHIBIT
National Oil Mill Superintendents Association and the Oil Mill Machinery Manufacturers and Supply Association, Dallas, Texas, May 27-29.

THE LUNKENHEIMER CO.
"QUALITY"
CINCINNATI, OHIO, U. S. A.
NEW YORK CHICAGO BOSTON LONDON
EXPORT DEPT. 129-135 LAFAYETTE ST., NEW YORK

"America's Best since 1862"

1-33-31

"Thick as molasses in January"

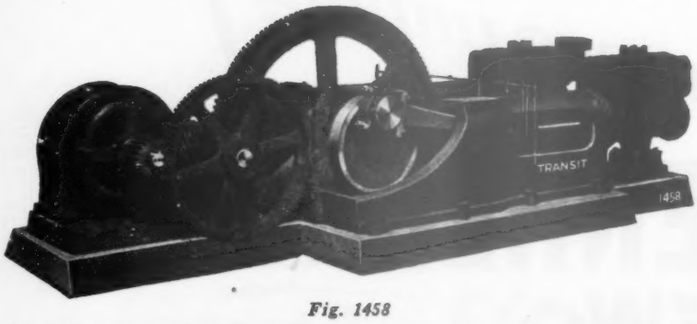


Fig. 1458

9 x 18" Horizontal Duplex Block Valve Power Pump with attached motor drive. Capacity 140 barrels per hour, 200 lbs. working pressure. This pump has the famous TRANSIT Block Valve fluid end for handling heavy semi-liquids at temperatures up to 800° F.

This old familiar clause aids us in giving you an idea of the consistency of the semi-fluids that can be handled with a—

TRANSIT BLOCK VALVE PUMP

Thousands of these pumps are in use every day pumping tar, residuum and other heavy, viscous semi-fluids.

The temperature of the fluid pumped is immaterial, as the construction permits any part of the fluid end to expand and contract without any detrimental effect.

(A New Bulletin 107-A on "Block Valve Pumps" on request)

NATIONAL TRANSIT
PUMP & MACHINE COMPANY
OIL CITY, PA.

District Offices: New York Philadelphia Pittsburgh Cleveland Tulsa Houston Denver

THOMAS MIDGLEY, JR., ANSWERS ATTACK ON ETHYL GASOLINE CORP.

Following an address by Dr. Yandell Henderson, professor of Applied Physiology at Yale University and an investigator of the action of gases on the human body, made before the American Society of Safety Engineers and International Safety Council in New York City, in which he said the use of tetraethyl lead in gasoline motors would cause suffering from slow lead poisoning and that the interests behind the Ethyl Gasoline Corp. purpose a monopolization of the motor and gasoline businesses, Thomas Midgley, Jr., vice president and general manager of the Ethyl Gasoline Corp., issued a statement, one of the most significant points of which was to bring out that the General Motors Corp., or any other motor manufacturer, has, and can have, no monopoly of the more efficient types of motors which ethyl fuel is claimed to make possible.

Ever since the General Motors Corp. developed ethyl fuel it has been commonly rumored that the development of ethyl gasoline was closely associated with proposed revolutionary changes in engine design and construction by the General Motors in the near future. Mr. Midgley makes clear in his statement that such changes are free to be made by any manufacturer. He also points out that such motors have been in use with special fuels for many years for racing and aeronautical and other special purposes, and that no basic patents on such motors are or can be held by any company.

To what extent a fuel like ethyl gasoline will affect engine design and construction and thereby affect the petroleum industry in the matter of gasoline sales, is obviously dependent upon the motoring public; that is, the extent of its demand for economy as against performance in an engine. Authorities state that the engine of the future—and probably the more or less immediate future—will be a compromise. So far as ethyl fuel is concerned, its immediate influence is affected by manufacturing capacity, and only as the supply increases to the point where it is largely available to motorists will the time come for gauging its effect on engine construction.

There has been a total of 300,000,000 gallons of ethyl gasoline sold since it was first marketed. The plans of the Ethyl Gasoline Corp. this year contemplated a supply of ethyl fuel of sufficient volume to treat 5 per cent of the country's gasoline production but this program was slowed down because of the accident at the Bayway experimental plant and to the increasing safeguards being taken.

Dr. Henderson's Statement

Dr. Henderson described the use of tetraethyl lead in gasoline as probably the greatest single question in the field of public health that has ever faced the American public, and attacked the Bureau of Mines, accusing it of arriving at an unwarranted conclusion in favor of lead gasoline after improper investigation financed by the Ethyl Gasoline Corp. He attacked the administration, charging neglect on its part to investigate intelligently.

"The economy which the Government is practicing just now," he said, "involved the elimination of many extremely valuable investigations and the curtailment of funds for such scientific work as is continued."

The commercial interests involved in the use of leaded gasoline amounts, according to Dr. Henderson, "to literally billions of dollars." In attacking the Bureau of Mines the Yale scientist said that it had investigated the danger to the public of acute lead poisoning only and had failed even to take into account the possibility that the atmosphere might be polluted to such an extent along automobile thoroughfares that those who worked or lived along such streets would gradually absorb lead in sufficient quantities to poison them in the course of months.

"Perhaps," said Dr. Henderson, "if leaded gasoline kills enough people soon enough to impress the public, we may get from Congress a much-needed law and appropriation for the control of harmful substances other than food. But it seems more likely that the conditions will grow worse so gradually and the development of lead poisoning will come on so insidiously (for this is the nature of the disease) that leaded gasoline will be in nearly universal use and large numbers of cars will have been sold that can run only on that fuel before the public and the Government awaken to the situation.

"Tetraethyl lead is added to gasoline in the motors, which prevents knocking and increases the efficiency of gasoline. Its use is forbidden in New York City.

Says Peril to Public

"This is probably the greatest single question in the field of public health that has ever faced the American public," said Dr. Henderson. "It is the question whether scientific experts are to be consulted and the action of the Government guided by their advice; or whether, on the contrary, commercial interests are to be allowed to subordinate every other consideration to that of profit. The size of the financial interests involved is stupendous. It is not a matter of millions or even hundreds of millions of dollars, but literally of billions.

"Except in New York and its immediate neighborhood, this leaded gasoline is being introduced everywhere throughout the country as fast as it can be supplied. It is sold now at little or no profit. The profit is in the future and will consist in control of the gasoline business and control of the automobile industry. The power or combination of powers that holds the patents on tetraethyl lead will be the only one that will be able to make the cars that we all want to buy; the improved cars for which we will discard those we now have. The power will also control the only fuel on which those new cars will run. The financial stake is almost inconceivably great."

Saying that the danger of acute lead poisoning such as occurred in the plants at Elizabeth and Wilmington will be guarded against successfully, he continued:

"In garages and repair shops, where conditions are already unhealthy on account of carbon monoxide, there will be added the hazard of slow but severe lead poisoning. For many years the earnest efforts of public health authorities and investigators have been aimed to decrease the frequency and intensity of lead poisoning. Lead poisoning has been the great single industrial disease and has caused an enormous amount of chronic illness and many deaths. Some sanitary authorities advocate forbidding by law the use of white lead paints. Now, just as this industrial health hazard is being decreased effectively in the pottery, it threatens to become a trade disease for the ever increasing thousands of men employed around garages and repair shops.

Criticizes Government

After attributing to Government over-economy the failure of the Public Health Service or other branch of the Government to hold a disinterested and Government-financed investigation of the leaded gasoline hazard, Dr. Henderson continued:

"An investigation is indeed being carried on at the Bureau of Mines Experiment Station in Pittsburgh. This investigation is financed by the Ethyl Gas Corp. A first report has been published which concludes in effect that no considerable public health hazard is involved. Other sanitary experts have criticised this report severely. In particular Dr. David Edsall, Dean of the Harvard Medical School, and Professor C. K. Drinker of the Harvard School of Public Health have published a paper showing the unreliable character of the Bureau of Mines

BIG PIPE for Big Jobs

40-inch "NATIONAL" Hammer-weld Pipe—part of an industrial gas line.

FOR gas service in which large diameter pipe is required, hammer-weld material offers these distinct advantages:

Uniform strength and reliability in every length—the result of a hammer-forged weld; smooth interior surface—no overlapped riveted seams; economy in weight—relatively easy to handle and economical to lay; plain end or various types of joints, simple in design and efficient in service; a wide range of sizes (20 to 96 inches) and wall thicknesses (¼ to 1½ inches) suitable for any gas line purpose. Bulletin No. 13 contains a description of manufacture and advantages in service. Free on request.

NATIONAL TUBE COMPANY, PITTSBURGH, PA.

General Sales Offices: Frick Building

DISTRICT SALES OFFICES

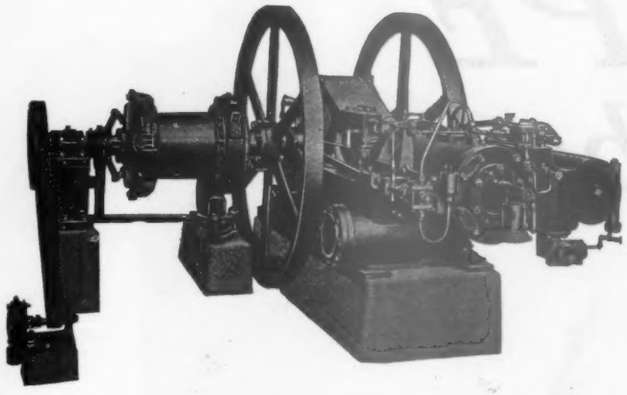
Atlanta Boston Chicago Denver Detroit New Orleans New York Salt Lake City Philadelphia Pittsburgh St. Louis St. Paul

PACIFIC COAST REPRESENTATIVES: U. S. Steel Products Co. San Francisco Los Angeles Portland Seattle

EXPORT REPRESENTATIVES: U. S. Steel Products Co. New York City

"NATIONAL" HAMMER-WELD PIPE

REID OIL ENGINES



for DRILLING

Power

Tools and Bailers can be handled quickly and easily.

Speed

Drilling time equals or betters that made by steam in the same territory.

Economy

Estimated savings on one well are as high as twelve or fourteen hundred dollars.

Write for Bulletin No. 26

Reid
TRADE MARK REGISTERED

Joseph Reid Gas Engine Co.
Oil City, Pennsylvania, U. S. A.

Branches and Agencies—Marietta Ohio; Logan, Ohio; Newark, Ohio; Ft. Recovery, Ohio; Shreveport, La.; Charleston, W. Va.; R. B. Moore, Bolivar, N. Y.; Bradford Supply Co., Robinson, Ill.; Frick & Lindsay Co., Bradford, Penna., and Kentucky Distributors; S. R. Shoup, 708 Pacific Electric Bldg., Los Angeles, Cal.; Frick-Reid Supply Co., Tulsa, Oklahoma, and Branches, Distributors for Oklahoma, Kansas, Texas, Arkansas and Wyoming.

Branch Shop—TULSA, OKLA.

report. I fully concur in every point that Drs. Edsall and Drinker have made against that report. In spite of protests, the investigators in the Bureau of Mines have used experimental conditions which are fundamentally unsuited to afford information on the real issue. The first essential of any good experiment is that it shall reproduce effectively real conditions, or the essential factor in the real conditions. This requirement is not met in that investigation. It was planned as if there were doubt as to whether or not lead dust is harmful, and as if the danger were merely that of immediate acute poisoning."

Mr. Midgley's Statement

The following statement was issued by Mr. Midgley, manager of the Ethyl Gasoline Corp.:

New York newspapers recently published a speech of Dr. Yandell Henderson attacking the Ethyl Gasoline Corp., its product, stockholders, methods of doing business, and morals. The main topic of Dr. Henderson's speech is, or should have been, the consideration of the hazard to public health arising from the use of ethyl gasoline. If the statement had been confined to an expression of Dr. Henderson's opinion on this subject, there would have been no occasion for any statement by the Ethyl Gasoline Corp., since Dr. Henderson's views on this point have already been widely promulgated by him. The Ethyl Gasoline Corp. desires, however, to make clear the facts concerning the other matters in connection with its business which were dealt with by Dr. Henderson, particularly the following:

Dr. Henderson states that the purpose of the "interests" behind the Ethyl Gasoline Corp. is to monopolize the production of motor cars and the sale of motor fuel. The facts are as follows: The product of the Ethyl Gasoline Corp. is ethyl fluid, the chemical which when added to gasoline in the percentage of about one-tenth of 1 per cent stops the detonation, or "knock" which is experienced to a considerable extent when operating automobile motors under conditions of hard service. The occurrence of this knock is the one important thing which has for a generation past prevented the building of more efficient gasoline engines. The General Motors Corp. recognized this problem some seven or eight years ago and started research in its laboratories at Dayton, Ohio, to determine the cause of this knock and any possible means which might be used to correct it and thereby permit more efficient motors to be built. The result of the work done along this line was the final discovery that the knock was caused by certain combustion characteristics of gasoline, which, as every one knows, is the only fuel which may be relied upon as a permanent and adequate source of supply for the automobile. It was further discovered that the addition of certain rare and therefore almost unknown chemicals to gasoline would prevent this knock.

No Monopoly of Motors

The results of this research work were freely published, and have already been of immense benefit to the automobile industry in the better understanding of the problems of engine designs and the production of more efficient engines and better motor fuels. The sole direct benefit which the General Motors Corp. received from the expenditure of this work was that it did own patent rights covering particular materials which could be added to gasoline to accomplish the desired result. It has, and can have, no monopoly of the more efficient types of motors which this new fuel will make possible. Indeed, such motors have been in use with special fuels for many years for racing and aeronautical and other special purposes. No basic patents on such motors are or can be held by any company.

It may be of interest in this connection to know that the engines for the airship "Shenandoah" are efficient high compression Packard aviation motors, and that the "Shenandoah" has for some time past been using, and is now using, ethyl gasoline, as being the fuel best suited for this type of high-efficiency motors. The world's speed record for automobiles, recently made by Tommy Milton in California, was obtained by the use of ethyl gasoline in a high compression motor of another make. Many other examples could be cited to thoroughly prove the advantages obtained by the use of this fuel in such motors. Such motors are built by various motor manufacturers in no way associated with the Ethyl Gasoline Corp.

The Standard Oil Co. of New Jersey started on the same line of research work referred to as having been initiated by the General Motors Corp. some two years later and followed this line of research independently but in close cooperation with the General Motors Corp. until the summer of 1924. At that time it was conceived to be not only to the best interests of these companies but to the interest of the more rapid progress of this economic improvement to merge these two lines of interests through the organization of the Ethyl Gasoline Corp. The General Motors Corp. had previously entered into contracts with many large oil refiners for the sale of its anti-knock product; and at the time of the organization of the Ethyl Gasoline Corp., the Standard Oil Co. of New Jersey specifically stated that its connection with the Ethyl Gasoline Corp. would have no effect whatever on the marketing policy of that corporation and that, far from seeking to obtain any monopoly of the sale of ethyl gasoline, the purpose and policy was to freely license the entire petroleum industry. At the present time, not only the Standard Oil Co. of New Jersey but a number of companies, both large and small, in no way associated with the Standard Oil Co. of New Jersey, are selling ethyl gasoline.

Answers Dr. Henderson

These facts we believe adequately meet the statements made by Dr. Henderson bearing on the alleged monopolistic purpose of the General Motors Corp. and the Standard Oil Co. of New Jersey as effected through the ethyl gasoline business.

With regard to Dr. Henderson's statements concerning the attitude of the Bureau of Mines, one can only draw the inference that he wishes to gratuitously insult a scientific arm of the Government, the probity of which has never been questioned.

If Dr. Henderson wished the public to draw the conclusion that because part of the cost of a scientific investigation is defrayed by an industry which is interested in it, the results are to be regarded with suspicion, he may wish to explain why it was that he himself unsuccessfully sought a retainer from the General Motors Corp. to make such an investigation. The General Motors Corp. preferred to entrust this investigation to an arm of the Government than to a private investigator paid by it.

Dr. Henderson is quite right in stating that the business of the Ethyl Gasoline Corp. is not at the present time conducted at a profit. Neither was there any hope of an immediate profit in the expenditures called for by the years of research work which the stockholders of this company were engaged in. The Ethyl Gasoline Corp. hopes and believes that it will at some time be able to conduct its business at a profit, which profit, however, compared to the resultant savings to the public through the conservation of gasoline, will be inconsiderable. Its stockholders do hope to enormously benefit in an indirect manner and to the same extent to which the public, the petroleum industry, and the automotive industry will all benefit through the conservation of motor fuel.

The Ethyl Gasoline Corp. frankly welcomes the present opportunity to make public the facts concerning its history, business and policies.

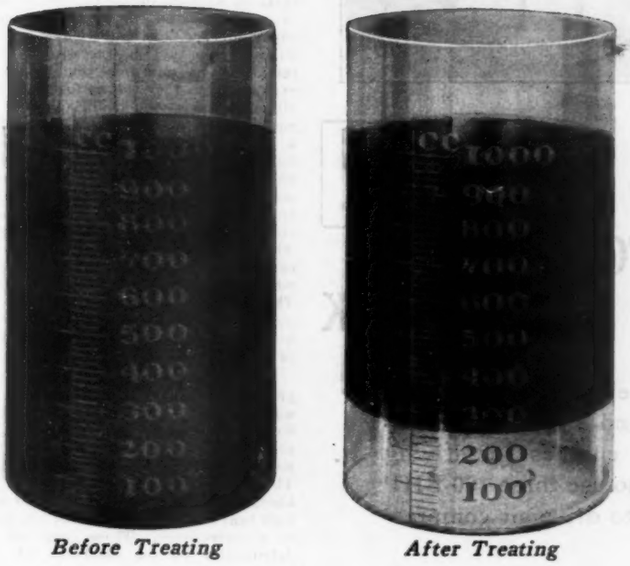
THOMAS MIDGLEY, JR.,
Vice President and
General Manager.

Dr. Henderson's Explanation

Dr. Yandell Henderson, replying to the

(Continued on Page 88)

WE HAVE BEEN FORCED TO ENLARGE OUR PLANT



Before Treating *After Treating*

Our new plant, completed only a few years ago with a capacity which it was believed would take care of expansion for a number of years—we have been forced to greatly enlarge.

TRET-O-LITE is coming to be universally recognized for what it *is*—the simplest, surest, most economical method of treating "cut" oil and recovering *all* the oil.

Let us have our nearest field expert call on you. No obligation.

WM. S. BARNICKEL & COMPANY

St. Louis, Mo.

Offices and Plant: Webster Groves, St. Louis, Co., Mo.

Tret-O-lite

Reg. U. S. Pat. Off.

160

In one of the Mexia field stations of the Pure Oil Pipe Line Company.

THE OIL ENGINE FOR PIPE LINE WORK

The Pure Oil Pipe Line Company is using four 50 BHP Ingersoll-Rand Type "PO" horizontal single-cylinder oil engines for driving pipe line pumps. They also use three 100 BHP engines of the same type to drive air compressors for blowing oil wells.

The simplicity, reliability and operating economy of the Ingersoll-Rand horizontal, single-cylinder Type "PO" oil engines make them particularly suitable for driving these pipe line pumps and high pressure air compressors.

Let our engineers show you how these oil engines can drive your pipe line pumps for less money.

Bulletin 10004 describes them in detail

INGERSOLL-RAND COMPANY

11 Broadway, New York

Offices in principal cities the world over.

Atlanta	Dallas	Knoxville	San Francisco
Birmingham	Detroit	Los Angeles	Salt Lake City
Boston	Denver	New York	Scranton
Buffalo	Duluth	New Orleans	Seattle
Butte	El Paso	Philadelphia	St. Louis
Chicago	Houghton	Pittsburgh	Washington
Cleveland	Joplin	Pottsville	

For Canada refer Canadian Ingersoll-Rand Co., Limited, 260 St. James St., Montreal, Quebec

57-SOE

Ingersoll-Rand

SCAVENGING VALVES SUGGESTED TO AVERT COMPRESSOR EXPLOSIONS

By William F. Parish* and William B. Smith Whaley*

Explosions in receivers and air lines of compressed air plants are of such frequent occurrence that the technical press no longer recognize their news value and descriptions of such explosions, when offered to magazines specializing on power and compressed air are rarely printed unless they present some novel feature.

It is generally conceded that air receiver and line explosions are caused by explosive mixtures due to air and, primarily, the lubricating oil, but no research is had to date that suggests a positive remedy. It is suggested that less oil be used; obviously too little lubricant may lead to disastrous results through overheating of the parts and causing mechanical damage to the bearing surfaces without improving the situation in regard to the forming of explosive vapors. True, the reduction in oil feed will increase the time necessary for the formation of mixtures that cause the explosions but they will be formed eventually and cause trouble. Explosions formerly were followed by a demand for a higher flash point oil, until it was found that the use of such oils did not reduce the trouble. In fact explosions occur with the use of both low flash and high flash oils. Also explosions are not limited, by any means, to compressors where only the lowest grade and least expensive oils are used but they occur wherever oils of any kind are used. This makes it clear that the trouble cannot be remedied or prevented through a control of the character of the lubricant.

It is impossible to operate the compressors without lubrication of some sort. When the animal or vegetable oils were in use which was at the time compressors were first introduced on a commercial scale, explosions were common. These fixed oils, as they are called, will liberate free fatty acids when used under high heat conditions and gums are formed as a consequence. These gums are very detrimental to the condition of bearing surfaces and seriously affect lubrication. While it is true that the fixed oils will not liberate volatile vapors or explosive gases the same as the mineral oils, explosions do occur under conditions where there is an accumulation of these easily oxidized and highly inflammable gums and oils.

With all of the mineral oils, from the lightest to the heaviest, some decomposition takes place under the heat and pressure in the air compressor cylinder and valve chests. The proof of this is in the carbon residue which is always left after oil has been decomposed and the lighter and more volatile products have been freed. That carbon residues are formed we have sufficient evidence in the reports of the examinations of deposits taken from air compressors, whether before or after explosions. These deposits when examined, have always been found to be composed of free oil and carbonized oil in almost equal proportions. There is generally about 10 per cent of foreign matter such as iron and other metal from the wear of the compressor parts, with some rust. Dirt and particles of raw material from about the plant are also found, such as coal dust, cement, fibres and vegetable material. The entire amount of deposit is held together by a binder formed from the sticky part of the burned lubricant. These residue deposits, of themselves, sometimes cause air line failure and they can materially aid in the formation of the more volatile oil vapors out of the heavier vapors by their action as catalyzers. It has been shown that deposits will materially lower the ignition temperature of vapors in an air line.

When an air line starts to fill up with conditions are right an explosion or a series of explosions of non-violent nature then take place which can be dissipated along the lines and cause no material damage. The heat of such explosion, however, bakes the carbon residue formation hard and finally overheats the pipe so that it eventually ruptures. In such a case the heating and baking of the carbon is the result of the explosion and not its cause. It has hitherto been thought that these carbon deposits ignited by themselves, or heated by the friction of the air to a point where they would ignite the oil and gas vapors. There is another and more logical explanation which will be presented shortly.

Explosives Liberated

The visible evidence of oil decomposition that is present in these carbon residue deposits proves the existence of a series of highly explosive gases and volatile vapors that have been liberated during the decomposition or cracking of the lubricant. These vapors can, in fact be recondensed into the familiar petroleum products, benzine, gasoline and kerosene. Some of the gas is so light that it cannot be easily condensed. All vapors and gases released by the decomposition of the lubricant are highly volatile and explosive when mixed with the proper proportion of air. In all air compressors the lubricating oil, of whatever nature and however fed, is undoubtedly finely divided and atomized at the time it leaves the air cylinder. The heat conditions are such as to thin any oil and the swift action of the air, the pressures and heats of compression together with the working of the pistons and valves, will not only thoroughly atomize the oil, however heavy, but will decompose certain parts of it. When this action takes place there is liberated into the air passage a small amout of free oil in a highly atomized state, so fine that certain portions of it will carry along with the air to the ends of the air lines and there help to lubricate or to gum up the air tools. There is also liberated a slight amount of burned oil in the form of carbon that is entrained in the air, later to be deposited in the valve chest and along the line. The gases and vapors from the oil decomposition are also present. Some of these gases can be detected as the air leaves the tools. These vapors when mixed with the proper proportion of air can, of course, be ignited by direct flame or increased heat due to excessive pressure. When this results in an explosion the cause is not mysterious.

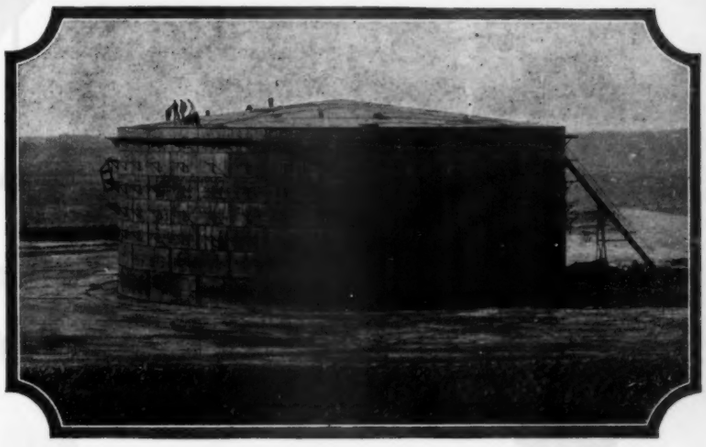
Origin of Danger

All of the various forms of hydrocarbon suggested above are mostly trapped within the air system to an amount that can be generated from the total weight of lubricant used. The total amount of vapor and gas is so small, as compared to the total amount of air handled, that it would present no problem if it did not accumulate. Whenever a space is left in the air system for these vapors to collect, and especially where cooling takes place, these vapors and gases will associate together in strata, the heaviest will settle and the lightest will rise and pass off in circulation whenever possible. A highly explosive and critical area is therefore present in every unscavenged static receiver or tank when air and combined combustible vapors and gases are present as is the case in air compressor receivers. This crtical area exists at some point between the tank bottom, where the heavier parts of the atomized oil will settle out, and the top strata, which contains the most volatile gases. Wherever the mixture of air and volatile vapor is in a critical condition and is in contact with metal the slightest external shock may this deposit, which is generally at some point of natural obstruction, the restricted passage forms a trap and allows the

(Continued on Page 86)

*Before the Metropolitan Section, Petroleum Division, American Society Mechanical Engineers, New York.

The REEVES BROS. CO Standardize on OCECO Equipment

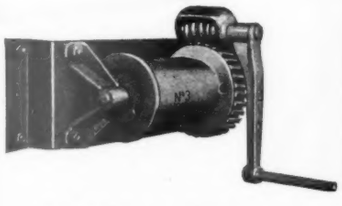


A standard 80,000-barrel Reeves Bros. tank—one of a number built at Texas City.

OCECO Roof Manhole

Gas-tight, spark-proof, water-tight. Approved by The Underwriters' Laboratories.

It was in 1871—just 12 years after Col. Drake drilled his famous well at Titusville, Pa.—that Reeves Bros. Company started building tanks.



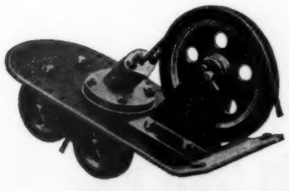
OCECO Safety Tank Winch

100% safe, self-locking, tamper-proof. Approved by The Underwriters' Laboratories.

Today, 54 years of constructing tanks and refineries complete stand to their credit.

Reeves Bros. know tanks. They realize the short-comings of tanks without equipment. *They believe that good tanks deserve good equipment.*

By standardizing on Oceco Equipment, they give their customers the advantage of



OCECO Cable Sheave Bracket

Gas-tight, true aligning, easy operating. Approved by the Underwriters' Laboratories.

protection against fire, lower insurance rates, savings on evaporation, lower operating and lower maintenance costs!

This is right in line with Reeves Bros. idea of service—the kind of service that has been responsible for the growth and success of their business extending back well over the half century mark.

OCECO Conservation Vent Unit

Permits breathing, forestalls bulging. An absolute fire-stop.

THE OIL CONSERVATION ENGINEERING CO.

Headquarters for Tank Equipment
Addison Road and N. Y. C. Tracks
CLEVELAND, OHIO

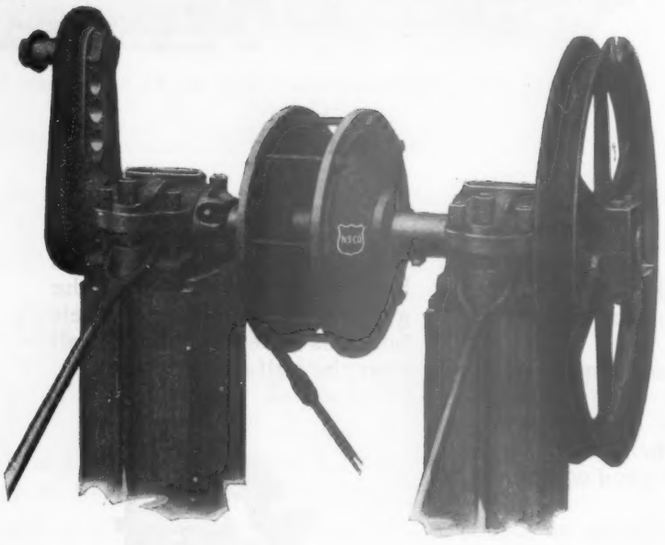
25 Broadway ..... New York
325 Iowa Building ..... Tulsa, Okla.
306 O-S Building ..... Casper, Wyo.

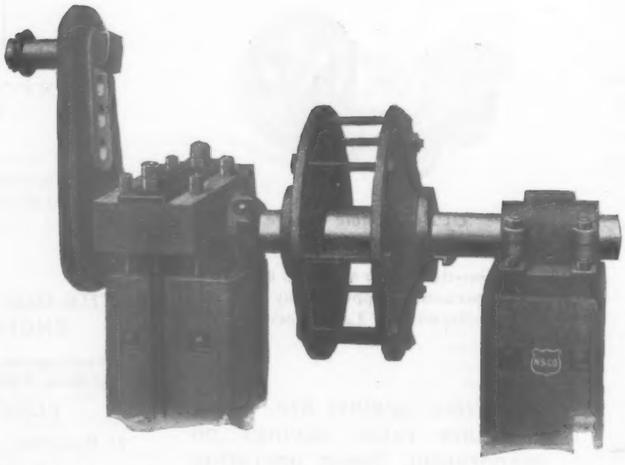
Beaumont Export & Import Co.
Beaumont, Texas and Tampico, Mexico

OIL TANK OCECO EQUIPMENT
SAVES EVAPORATION AND PREVENTS FIRE

NATIO

Standard



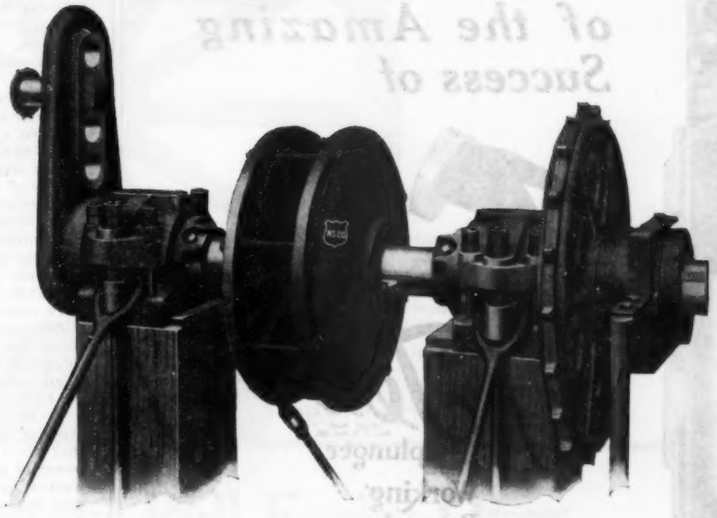


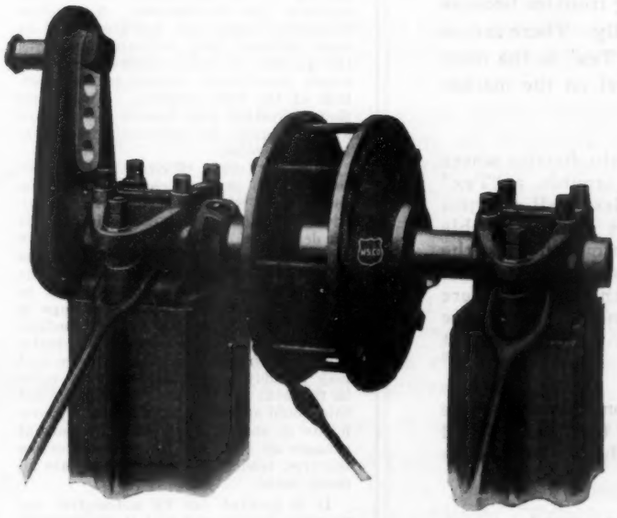
Any Desired Ar

THE NATIONAL SU

IONAL

d Rig Irons





Assembly Furnished

UPPLY COMPANIES

It packs itself!

This is the Secret of the Amazing Success of

"Tex" plunger Working Barrels

After the "Tex" is down in the well where it belongs you can be certain that you will have no packing troubles because it packs itself automatically. There are no cups to wear out. The "Tex" is the most economical working barrel on the market today.

For example, in a certain district where wells have always given trouble, a "Tex" was installed in the hardest well of them all. This well had given endless trouble due to cut oil. After one month's use the "Tex" was still on the job and there had been no necessity to pull the well and there was no cut oil. After another month we received the report: "No pulling. No cut oil."

We have not heard from that well since and we are convinced that the "Tex" is still giving perfect service. That's what it does in ALL wells.

Why not drop us a postal card and get complete information?

The "Tex" is manufactured solely by the

Bradford Motor Works

BRADFORD, PA.

Branch Factory and Warehouse:

TULSA, OKLA.

Screw Type Oversize Standing Valve

TO GET MORE POWER FROM GALLON AND BETTER UTILIZATION OF FUEL

By L. M. Fanning

There has been a marked tendency toward continued improvement in design and construction of automobile engines to accomplish better fuel distribution, better carburetion and all around better utilization of gasoline, but while there are indications of revolutionary changes, how soon they will come and to what extent they will contribute to the conservation of petroleum resources are difficult to determine.

In the opinion of automotive engineers the matter of increasing mileage and thus effecting a substantial saving in gasoline, resolves ithelf down to a question of public demand. The automotive industry has interpreted public demand as requiring in a motor car, first and foremost, flexibility and power. This means easy starting and climbing hills in high.

If traced back to its original conception, the demand for these qualities was acquired and developed by the motorist as a result of competition among automobile manufacturers, who, as a natural course of development, put out enignes that would give increasing satisfaction as to flexibility and power. As soon as the motoring public learned what to expect, the demand for these qualifications in a car became a force of arbitrary character affecting the manufacturer.

To meet the conditions required, automobile engines are run on a comparatively low efficiency basis, and the motorist's lack of interest contributes to no small extent to the fuel waste. According to the United States Bureau of Mines a series of tests on many makes and types of automobiles and trucks revealed that an average of 30 per cent of the power of gasoline used as a motor fuel is wasted by being discharged in the engine exhaust in the form of combustible gases.

Better Fuel Use

As regards improved engine design and construction, the tendency for better fuel utilization is noted in the special designing of the combustion chamber, to mention one development. Automotive authorities point out, however, that as more efficient fuel utilization involves the question of high compressions it becomes immediately related to the question of the fuel available. They state that tetraethyl and benzol fuels afford an opportunity for substantial conservation of gasoline.

How far more efficient fuel utilization can go through changes in engine construction without sacrifice of the qualities of flexibility and power is difficult to determine, according to automotive authorities. At the present time mileage of different cars varies because of the great mixture of types from Fords to heavy trucks. Probably the average is around 16 miles to a gallon of gasoline. This average will undoubtedly gradually change in favor of greater mileage and may possibly be worked up to 30 miles in the next ten years, or even more, but this would assume in addition to improvements in engine construction, important changes in body and other construction features, tendencies toward which are already noted.

It is pointed out by automotive authorities interviewed that if the motorist did not require extreme flexibility and reserve power, the industry could easily build engines to make a good many more miles per gallon. The European practice of small pistons and high speed motors is favored by some who believe that the question of fuel economy is a paramount one. Some foreign cars make twice and sometimes nearly three times as much mileage pr gallon as American cars of the same weight but this is done at a sacrifice of flexibility and means crawling up a knoll in low speed as against the American demand for easy starting and mountain climbing in high.

Important Departures

It is evident that to make the European practice general in this country would require re-educating the American motoring public. There is little likelihood of any such attempt being made, as regards the entire automotive industry, unless the industry is forced to it by a shortage of gasoline. However, there are in the air certain important departures. One is the development of the two-stroke cycle engine, which accomplishes fuel economies because of the shorter time interval to complete the whole process of combustion, but which, it is stated, has not yet been developed so as to get the flexibility of the four-stroke engine. Other important developments now in experimental stages are solid fuel injection engines and semi-Diesel engines utilizing heavy oil.

According to Herbert Chase, consulting engineer and an automotive authority, modern passenger cars are far from attaining that approximate degree of perfection which a casual observer is apt to credit them with and it is not at all unlikely that the next ten years will see quite as important and perhaps considerably more radical developments than the past decade has seen. He discusses possible developments including an engine capable of giving high torque at comparatively low speed and considerably higher economy at low loads than now are common and axles, frame and body considerably lighter than at present. Such a car, he says, should be capable of averaging fully 30 miles per gallon of fuel consumed and at the same time have good accelerating ability, a reasonably high maximum speed and such other characteristics as to insure good handling in traffic and easy parking.

Lighter Vehicles Coming

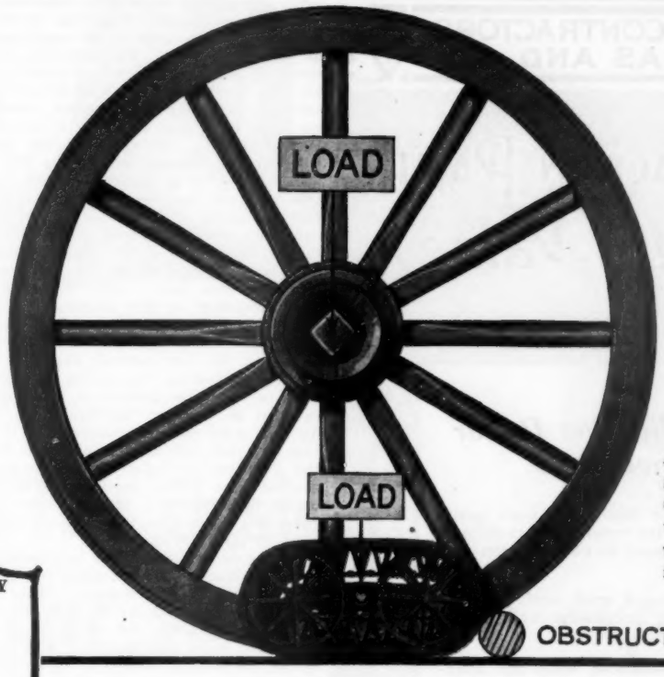
It would seem, he says, that manufacturing economy would demand a lower weight and that, especially when it is desirable from a design and operating standpoint also, we shall see lighter vehicles in the future. Mr. Chase believes we are not likely to see in this country an extensive use of such diminutive cars as are popular in Europe, but there is likely to be a decrease in average size, partly because of the convenience of small cars in traffic.

"If lighter weight is to be realized," Mr. Chase says, "it must start with the body, for, with conventional construction, a heavy body demands a stiff and heavy frame, heavy springs and running gear and a larger and heavier engine and transmission units than is required otherwise. Conventional construction in closed bodies particularly, presupposes a quite rigid structure and requires a rigid foundation, both of which involve considerable weight which seems unnecessary. If, on the other hand, we start with a body which will stand considerable flexing without injury or squeaking, it can be made comparatively light in weight. This is the form of structure favored by Weymann and now used extensively in France and England."

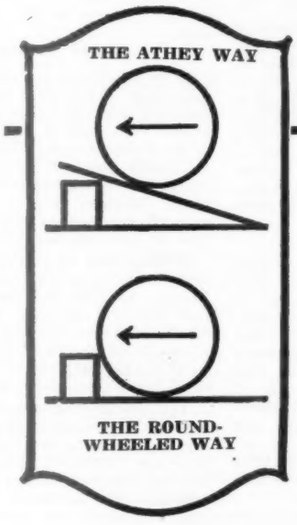
"We have come of think of passenger car bodies too much as a thing apart from the chassis—a separate unit with its own foundation," he continues, "whereas it need not be this at all. Chassis and body can share a common frame or foundation and still be made detachable if desired. Also frames can be made much stiffer than they are today without adding to and probably reducing their weight, yet a stiff frame is not an essential if the body is built to stand weaving, and it can be so built."

A considerable item of weight as well as source of much danger in present day bodies, Mr. Chase states, is the plate glass employed. The problem of providing a substitute is receiving serious attention, he says. "If, as I believe, we can develop considerably lighter bodies, a lighter chassis will be possible also. Axles and springs will have to support less weight and, of course, can be made lighter themselves as can the chassis frame. Naturally a less powerful and consequently a lighter engine will enable use of lighter transmission units." Re-

(Continued on Page 88)



An Athey Truss Wheel goes over a 6-inch obstruction as easily as would a huge round wheel 17 feet, 5 inches in diameter.



Atheys Pull Easily Over Ground Obstructions

The Athey Truss Wheel has a mechanical advantage when passing over an obstruction in the road, equivalent to a round wheel of great size.

The load-carrying axle in an Athey Wheel is placed in the center of an oscillating rocker beam, on the ends of which are mounted track wheels. A track band is fitted loosely around the two pair of track wheels. When an Athey Wheel surmounts an obstruction, the load is gradually carried up and down an inclined highway of steel.

This mechanical advantage makes possible the hauling of exceptionally heavy loads over rough and uneven ground with less than one-half the power required by round wheel equipment. This makes possible enormous savings in operaing and maintenance costs of tractive power.

They Bridge the Soft Spots

Capacity 10 tons. Send for further information.

ATHEY TRUSS WHEEL CO.
130 No. Wells St., Chicago, U. S. A.
Cable Address: "Trusswheel Chicago."
The Baldwin Locomotive Works, Foreign Representatives,
Philadelphia, Pa.

ENGINEERS & CONTRACTORS
IN NATURAL GAS AND OIL

GASOLINE EXTRACTION PLANTS
with a PLUS Value

The Most Gasoline Per Dollar of Plant Investment

We recently completed the 52nd Hope-built gasoline extraction plant—and the results achieved have set a new standard for speed in construction and economy in operation.

We are pioneers in this line of work, with a record of installations uniformly successful and highly profitable.

This experience of ours—backed with our ever-ready organization and construction equipment—are your best assurance that, from a Hope-built plant, you will get the most gasoline per dollar of plant investment.

Let Us Work With You.

HOPE SERVICE

Engineering counsel design, construction and contracting—in pipe lines for oil and gas, oil pumping stations, gas compressing and boosting plants, plants, gasoline recovery systems and inter-city gas mains.

UNIT RESPONSIBILITY

H-2-A

ENGINEERS CONTRACTORS HOPE Engineering & Supply COMPANY DESIGNERS MANUFACTURERS
MT. VERNON, OHIO, U. S. A.

CRACKING OF MEXICAN CRUDE EXPECTED ON EXTENSIVE SCALE

By L. M. Fanning

The interest of the Standard Oil Co. (Indiana) in the Pan-American Petroleum & Transport Co.'s Mexican properties is expected to result in important developments in connection with the refining of Mexican crudes. It would not be surprising if the Pan-American, as economic conditions warrant, would go into the cracking of Mexican oil on an extensive scale, erecting Burton cracking units in Mexico and possibly at the Destrehan, La., refinery. Through the Black process installations at the Tampico refinery, it is understood that the Pan-American has already done considerable cracking of Mexican crudes, both light and heavy oils, and recent additional installations and improvements have been designed to increase the gasoline yield from heavy crudes, principally in anticipation of the running of increased quantities of Ebano production.

As the Pan-American Petroleum & Transport Co. now controls the British Mexican Petroleum Co., which is interested in Venzuelan production, it is logical that as cracking facilities for handling Mexican crude are increased in this country, they will also be available for the treating of other foreign crudes shipped here. This development as it occurs will, therefore, probably have an important bearing on the economic relations of imported crude.

At the present time there is relatively little cracking of Mexican crude oil done by refineries in this country. This is because the demand for Mexican oil as fuel oil, particularly for ships, is such as to keep it out of competition with fuel oil as a cracking stock. It is pointed out that there is no profit in the cracking of Mexican oil with fuel oil costing around 4 cents a gallon and gasoline selling at the refinery at only slightly more than 10 cents a gallon.

Matter of Price

Should demand in relation to supply dictate higher prices for gasoline over any considerable period cracking of Mexican oil, and heavy oil generally, would doubtless be undertaken by refineries of the country on a much larger scale than is the case at present. One authority points out that the matter of cracking heavy oils resolves itself down to merely one of supply and demand, and that so far as scientific ability to get greatly increased yields of gasoline from heavy oil is concerned, there is nothing to worry about.

Mexican crude is now essentially a fuel oil, supplying marine and industrial demand. Virtually all Mexican oil, both light and heavy, is topped, as the lighter ends have to be taken off to render it available for fuel purposes. The gasoline yield of the light oil in topping is about 14 per cent and of the heavy about 2½ per cent. Some heavy Mexican crude is used without topping as fuel oil for shore use, but as a rule the gasoline is topped off.

Should conditions warrant the Pan-American and other companies going extensively into the cracking of Mexican fuel oil, the percentage yield possible from the original crude stock would be high due to the fact of the large proportion of fuel oil from the original charging stock which would be available for cracking, but cost would be high as compared with light oil necessary to be run to produce the same quantity of gasoline.

Production of Mexican crude in 1924 amounted to 139,105,000 bbls., divided as follows: Light oil, 39,047,000 bbls. and heavy oil 100,058,000 bbls. This compared with 149,585,000 bbls. in 1923, of which 61,043,000 bbls. were light oil and 88,542,000 bbls. were heavy oil. The approximate daily average production for the two years compares as follows:

	Light Oil Bbls.	Heavy Oil Bbls.	Total Bbls.
1924	107,000	274,000	381,000
1923	167,000	242,000	409,000

At the present time Mexican production is running about 375,000 bbls. daily, of which 123,000 bbls. are light oil and 252,000 bbls. heavy oil.

Imports of Mexican crude oil into the United States in 1924 amounted to 73,862,000 bbls., and in addition there were 3,914,000 bbls. of crude oil imported from other foreign countries. The total runs of foreign crude oil by United States refineries last year amounted to 45,765,000 bbls. Changes in stocks of foreign crude oil held at refineries in the United States and by importers in the United States were unimportant at the close of the year compared with the end of 1923. Comparing imports and refinery runs, it is indicated that something like 32,011,000 bbls. of imported foreign crude, most of it Mexican crude, is consumed directly as fuel in the United States without topping.

Added to the imports of crude oil were approximately 13,000,000 bbls. of topped oil imported from foreign countries in 1924, making a total income of Mexican and other crude oil and fuel oil in that year of approximately 87,000,000 bbls. After deducting the estimated yield of gasoline and other products from foreign crude run by United States refineries, the approximate quantity of foreign fuel oil (that is, Mexican fuel oil) marketed in this country in 1924 was 82,000,000 bbls.

Use of Mexican Oil

It is possible to get some idea of the uses made of this oil. Mexican fuel oil delivered for ships bunkers at United States ports and at insular possessions of the United States in 1924 amounted to 18,708,000 bbls. of the total deliveries amounting to 73,031,000 bbls. In other words, Mexican fuel oil accounted for over 25 per cent of total deliveries of fuel oil for ships bunkers.

Mexican fuel oil is also burned extensively by locomotives in the United States. In 1924 the quantity of Mexican fuel oil consumed by locomotives of the principal railroads of the United States in all classes of service amounted to 11,954,471 bbls. out of 63,206,034 bbls. of all fuel oil consumed, or 19 per cent.

The indicated consumption of Mexican fuel oil by manufacturing plants, buildings and homes in the United States last year was 51,338,000 bbls. This includes Mexican crude oil burned as fuel without topping. The estimated total consumption of fuel oil by these agencies was 128,000,000 bbls., showing that Mexican fuel oil supplies about 40 per cent.

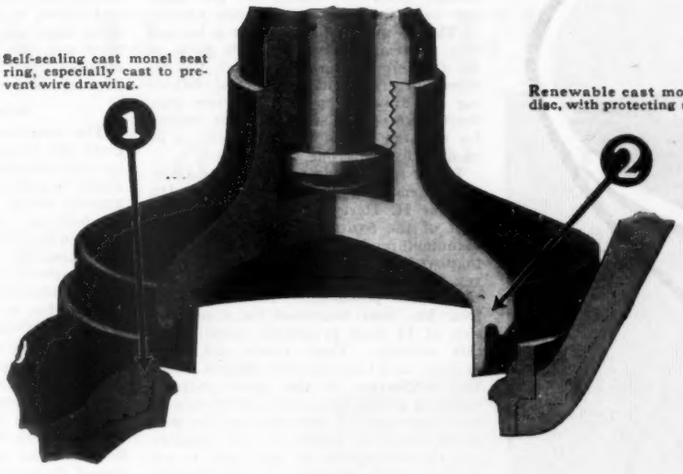
Mexican oil, as shown by the above comparisons, is established prominently as a source of fuel oil supply. Marine use of fuel oil is now practically recognized as essential and, broadly, fuel oil for this purpose is out of competition with coal. Somewhat the same situation exists as regards locomotive consumption, so that more than half of the Mexican oil consumed in the United States is in what may be termed preferential demand.

The Mexican fuel oil being used in oil burners by buildings and homes may also be considered as supplying special demand, not wholly affected by coal competition.

Should economic conditions bring about a more general movement on the part of refineries to utilize Mexican oil for cracking, new sources of supply to take care of fuel oil requirements would have to be developed provided the continued use of fuel oil in direct competition with coal was warranted. Heavy South American crudes would doubtless be available to supply such demand.

VENEZUELA WELL

Venezuelan Oil Concessions, Ltd., well No. R-24 is reported flowing about 1,000 bbls. of oil daily through 1½-inch choke.


Self-sealing cast monel seat ring, especially cast to prevent wire drawing.
1
Renewable cast monel metal disc, with protecting seat flange
2

Reading Cast Steel Globe Valve, 400 lb. W. S. P. Note bonnet and yoke, cast in one piece.

This design *can cut your valve expenses*

Reading self-sealing seat rings with simple protection from steam erosion

Just from an inspection of the design above, can the heart of any globe valve give you longer service?

First, note the self-sealing seat ring of cast monel metal. It does not depend upon threads for sealing. The step above the threads is machined at an angle and seats tightly upon the machined cast steel of the seat, stopping all leakage from possible thread channels.

The projecting flange on the cast monel metal disc cuts down steam flow while the seating surfaces are still far apart—stops wire drawing, the erosion due to high velocity steam.

The disc is not rigidly attached to the spindle. It seats perfectly when high temperature causes the valve to expand, for it can adjust itself.

The monel metal disc is easily renewed, while the valve is in the line, and in a very short time. Naturally, the valve can be packed under pressure.

These are only a few of the features that make for satisfactory service from Reading Valves. Let us send you illustrated folders showing other important points. Please state whether you are interested in globe, gate, angle or check valves and give working pressures.

READING STEEL CASTING CO. *Inc.*

Reading Valve and Fittings Division · Bridgeport, Connecticut

An Associate Company of the American Chain Co., Inc., Bridgeport, Conn.

Offices and Warehouses: Boston Chicago Cleveland Detroit Hartford Houston New York Philadelphia Pittsburgh Rochester San Francisco Tulsa

Stocked by: Norvell-Wilder Hardware Co., Beaumont, Houston, Mildred and Shreveport Grinnell Co. of the Pacific, Los Angeles, Calif. · Woodward Wight & Co., Ltd., New Orleans

R

READING *for* steel

PRATT & CADY *for* iron *and* bronze

specializing for quality valves* AND *fittings

P&C CO

GRAVER BUILT

Graver Builds

Tanks
Welded
Riveted
~~Riveted~~
(Riveted, Inside & Outside Welded)
Structural Supports
Tower Tanks
Standpipes
Any Size Tanks
Erected Anywhere

Refinery Equipment

Stacks-Breechings

General Steel
Plate Construction

Water Softeners
Hot Process
Cold Process
Zeolite
Household

Filters
Pressure

Purifying Systems
for Swimming Pools

WHY "GRAVER BUILT"?

We might say that Graver built equipment is best—or tell you of the large shops or of the organization working as one man—or a myriad other reasons; but we believe the monumental evidence of the steel plate work we have built during our 68 years existence is the one big reason why so many will only accept equipment labeled "Graver Built."

GRAVER *Founded 1857 Corporation*
EAST CHICAGO, INDIANA

NEW YORK CHICAGO TULSA HOUSTON

PROGRESS IN PETROLEUM RESEARCH AWAITING PROGRAM AND FINANCE

By L. M. Fanning

That financial provision is under consideration for a broad plan of fundamental research relating to petroleum has been indicated in previous articles in The Oil and Gas Journal. It is learned that material progress has been made in deciding on the form by which the research program will be financed, following the drawing up of a concrete plan descriptive of the subjects to be treated for research and of the machinery to be used in carrying out the work.

In his recent address before the American Chemical Society at Baltimore, Dr. Charles H. Herty of New York, president of the Synthetic Organic Chemical Manufacturers' Association announced that within the past year "an able survey of the needs of research and the remarkable possibilities resulting therefrom has been canvassed by a commission of 11 most prominent scientists in this country. Their views and their findings have been put into definite shape. The realization of the great program prepared awaits now only concurrence in the importance of the work on the part of the financial leaders of the industry and the willingness on their part to set aside a small fraction of their investment annually to start this work in full force."

During the past year The Oil and Gas Journal has published various articles giving the progress of the work of this commission of 11, although no public announcement has been made of its activities. As yet the names of the scientists who cooperated in working out the plan for research have not been officially made public but it is expected that in a short time this will be done, together with their complete plan.

Meantime there has been some criticism among technichal men in the oil companies over the remarks of Dr. Herty to the effect that the industry has fallen far short of its duty as to research and that "the great leaders of our oil industry will soon have put on them the decision of determining whether they will go down in history as the despoilers of one of the nation's greatest assets or as benefactors who made available a greater source of national wealth than is now derived from petroleum."

Fundamental Research

The emphasis that the oil companies have laid on scientific work in their own organizations and the progress that has been made with new processes, etc., in the last few years is pointed to as evidence of fact that the industry has not overlooked the vast possibilities of research. The proponents of a research program for the entire industry, however, stress the need of fundamental research of such broad character that companies individually cannot be expected to carry on the work.

Another criticism that has been heard of the program now about to be considered by the industry is that oil company technologists do not appear on the committee of 11, but that the plan has been drawn up largely by "outside" scientists. Those active in this movement state that it would have been desirable to have had a larger representation from the industry itself but it was considered that the possible policies of companies as to discussion of problems relating to refinery or production practices by their technologists should be respected. Moreover, the survey related to the broad scientific foundations of the chemistry and physics of petroleum and included a study of what had been done along similar lines by other industries, and the special committee was chosen with considerable regard to the members' experience in the broad field of research.

While the names of those serving on the committee cannot be announced at this time, it is possible to state that the committee was made up of three groups of men, one, a group of industrial men representing other large industries which have done a great deal of research; two, a group of university men particularly known for their experience in research, and three, a group of men having had some experience in petroleum investigations and who were free to express their opinions and assist in the preliminary plan of research.

Scientific Program

The consideration that is now being given the research program as drawn up by this committee indicates that the industry is well on its way toward scientific activity which bids fair to revolutionize the business. Just how the plan will be financed has not yet been determined, but the scientific work projected includes many specific items of technical study related not only to the chemistry of petroleum but to the discovery and recovery of petroleum.

It is known that the plan contemplates making every possible use of existing facilities. In previous articles the point has been made that university investigators should do much more in petroleum research than they have collectively done in the past; in fact, that they should do most of the work which is essentially of a theoretical nature as such research is generally recognized as a proper university function. To accomplish this, it has been suggested that our universities should be generally sprinkled with special research fellowships.

One of the important points brought out in connection with petroleum investigations at universities is that such investigations will stimulate interest among science students and that as these men get their training they will be available for special petroleum work, with lasting benefit to the scientific development of the industry.

Present scientific organizations will doubtless be encouraged in prosecuting petroleum investigations, including such organizations as the American Chemical Society and the American Association of Petroleum Geologists. There is a possibility that the resources of the National Research Council will be utilized for furthering a general research program for the petroleum industry. It will be recalled that the council recently appointed a committee on the chemistry of petroleum as a part of the division of chemistry and chemical technology of which Prof. J. F. Norris, of the Massachusetts Institute of Technology, is the head. The committee comprises Dr. Benjamin T. Brooks Dr. R. T. Anderson, Prof. J. R. Prof. J. R. Bailey, Prof. Cecil Boord, Dr. R. H. Brownlee, Dr. H. S. Davis, Dr. Gustav Egloff, Dr. Harry L. Fisher Dr. W. A. Gruse, Dr. C. O. Johns, Prof. T. B. Johnson, Dr. E. Emmett Reid, Dr. N. A. C. Smith, Dr. F. B. Thole, and Dr. Gerard Wendt.

To Stimulate Interest

This committee's chief purpose as announced, is to stimulate interest in petroleum research among chemists and in university laboratories, and it is logical to suppose that it will work in close cooperation with a general organization of the petroleum industry on research.

As has been mentioned, the research plan now being considered includes research applied to the discovery and recovery of petroleum. The American Association of Petroleum Geologists, through its research committee, has already carried on some fundamental research and has projected a plan for further investigations. This plan includes study of the origin of oil, considered under two headings: The compostion of mother substances, and the processes by which oil is generated from them. Both questions call for microscopic work the latter for microthermal work. The National Research Council also has a division of geology and geography which has a committee on studies in petroleum geology, the personnel of which is about the same as that of the

A Better Flow Tank—
and why it is better

PRODUCING companies like the way the Parkersburg three-ring Flow Tank withstands the excessive vibrations from heavy flowing wells — ask any Wortham operator.

Parkersburg filling manifolds, conductors, gauge hole covers, pressure-vacuum relief gauges, flow tank valves, and vacuum breakers can be supplied according to customer's requirements.

Deck rafters extend from manhole ring on inside ladder to each side sheet seam, bracing side sheets and supporting the deck.

Bottom and deck joined firmly by vertical ties, bolted to angles inside each bottom and deck seam.

Cleanout opening 24" x 24", flush with bottom. Cover provided with 6" pipe connection and 2" water connection.

Sides, bottom and deck are 12 gauge copper-bearing blue annealed steel sheets. Heavy steel channels back each side sheet seam.

Intermediate chime braces extend from ring on inside ladder to each side sheet seam.

Steel angles back each bottom seam on inside of tank — steel channels on the outside.

You can get further details on Parkersburg Flow Tanks and other field equipment from our nearest representative — or direct from us

The PARKERSBURG RIG & REEL COMPANY

Main Office and Works, Parkersburg, W. Va. ***New York Office,*** 30 Church St.

California Representatives, BUCK & STODDARD
485 California St., San Francisco, Calif.; Box 720 Arcade Station, Los Angeles, Calif.

District Offices and Distributing Warehouses from which Parkersburg Service is available

TEXAS
*Houston
Best
Breckenridge
Corsicana
Liberty
Luling
Olney
Orange
Panhandle
Ranger
Vernon
Wichita Falls

WYOMING
*Casper
‡Rawlins

LOUISIANA
*Shreveport
Cotton Valley
West Lake

KANSAS
Eldorado
Madison
Winfield

WEST VIRGINIA
Parkersburg
Clarksburg

OKLAHOMA
*Tulsa
Bristow
Drumright
Holdenville
Hominy
Okemah
Pawnee
Wetumka
Tonkawa
Wilson
Shidler
Stroud
Wewoka

ARKANSAS
*El Dorado
Louann
Smackover
McNeil

COLORADO
Denver

*District Offices ‡Frick-Reid Supply Co.

137 million cubic feet of Gas handled daily by this TRUMBLE

This Trumble Gas Separator No. 5 rated at 100 million cubic feet daily capacity is handling an average of 137 million cubic feet of gas and several thousand barrels of oil daily in the Cromwell Field. You will always find a Trumble handling *over* rather than *under* its rated capacity.

The Trumble really separates oil and gas on a practical, economical basis. It saves both oil and gas by holding the lighter fractions in the oil while the separation is taking place. Write us now for full information and prices.

TRUMBLE GAS TRAP CO.

801 Higgins Bldg.,
Los Angeles, Calif.

William C. Rae,
Sales Manager

Eastern Representative:
C. F. CAMP CO.
14 East Seventh St. (P. O. Box 289)
TULSA, OKLAHOMA

research committee of the American Association of Petroleum Geologists.

During the last year the geological association has had a chemist conducting microthermal studies who has developed equipment and technique under the auspices of the National Research Council. This problem, partly because of the progress that has been made in research work upon it, is placed as first among the subjects to be investigated.

The American Association of Petroleum Geologists is also desirous of starting studies of the source rocks of oil together with the concentration, migration and accumulation of oil and gas. The study of oil reservoirs and of the relationship of the gas, oil and water in them is proposed as of primary importance to the oil producer.

Another important subject which the research organization of the association is anxiously engaged in is that of correlation of oil sands. It is pointed out that operators are employing geologists in this new field of investigation in which there are few specialists in the world. Therefore, there is no central agency. Research along these lines will endeavor to develop specialists in geographical centers to classify the diagnostic characteristic of each horizon and assist commercial workers. Other subjects proposed for immediate research are metamorphism and oil recovery.

TESTING POWERS OF OIL AND GAS DIVISION

AUSTIN, Tex., May 2.—A new test may be made of the act investing the Railroad Commission with conservation powers in the establishment of the oil and gas division. Cases now are pending under submission in the Supreme Court testing the validity of the oil and gas division rules, but the new test would be a refusal to pay the one-twentieth of 1 per cent of the value of crude oil produced, used for the support and maintenance of the division.

The Denison Gas Co. case, decided by the Dallas Appellate Court in favor of the law's validity, is pending in the Supreme Court, through which the status of the oil and gas division will be definitely determined.

There are cases pending in the Austin Appellate Courts which involve the validity of Rule 37, adopted by the commission and enforced by its oil and gas division. This rule forbids the drilling of oil wells within 300 feet of each other and not closer than 150 feet to the property line. A Corsicana company has obtained an injunction forbidding the commission or State officials from interfering with it.

If the whole oil and gas division is void, Rule 37 falls immediately. If the oil and gas division is held valid, the reasonableness of Rule 37 would have to be adjudicated. The oil companies contend Rule 37 is unconstitutional as taking property without due process. They claim the right to drill where they please on land owned or controlled through lease.

PENN MEX DIVIDEND

The directors of the Penn Mex Oil Co., controlled through stock ownership by the South Penn Oil Co., has declared an initial quarterly dividend of 50 cents a share. Recent developments on the company's properties in Mexico, it was announced, have materially added to earnings. The Penn Mex Oil Co., jointly with the Transcontinental Oil Co., the Mexican subsidiary of the Standard Oil Co. of New Jersey, operates the Pacencia oil fields in northern Mexico, which it is said, has potential production of 60,000 bbls. of crude oil daily. The company recently completed the laying of a pipe line with a daily capacity of 40,000 bbls. of crude. In addition the Penn Mex operates lands in the light oil fields in the south of Mexico, where the company has a daily production of 3,000 bbls. Development work is now under way in both fields.

Coal Carbonization Experiments Produce 12 Gallons of Oil

CHICAGO, May 4.—The past week witnessed a demonstration of what is believed to be the first practical test of the slow carbonization of coal in this country. One of the leading coal mining concerns in the Middle West has grappled with the problem of finding a market for screenings. Under the former system of mining, the miners were paid for lump coal only and the output of screenings was not oppressive. But under the changed conditions forced by the miners' unions the operators pay for the entire run of the mine, which has resulted in the bringing to the surface of vast quantities of small, fine coal for which the demand is so restricted it has been found impossible to market this product at a profit.

The company in question after experiments extending over five years has evolved a process whereby the screenings are converted into a lump fuel which it is claimed is better than anthracite in many ways and can be sold at half the price. The process is a slow roasting at low temperature in revolving kilns. Tar and other products are driven off and the remainder is a combination of pure carbon and gas. The by-products include 12 gallons of an oil which is claimed to be identical with the highest grade of eastern crude.

The company has such faith in the process it proposes to expend $25,000,000 in the building of plants for the treatment of bituminous coal screenings at its mines in southern Illinois and Indiana. The products listed from each ton of screenings treated include 1,400 pounds of the new fuel, and 24 to 26 gallons of tar and from 15 to 20 pounds of ammonia sulphate. From the tar there is extracted approximately 8 gallons of benzol and 12 gallons of crude oil. Many other by-products can be extracted from the coal but at present it is planned to make only those mentioned.

Before a company of prominent business men and others, tests of the plant were made and also tests of the fuel. For the latter it is stated it is very easily set on fire, that it holds its fire for long periods, as high as 48 hours, and then, when the drafts are opened in a short time a hot fire results. It is said to burn evenly without waste in the usual forms of domestic heaters. The company which has been making the tests is the Big Ben Coal Corp.

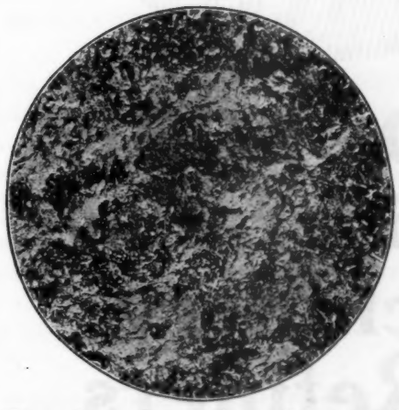
During the life of the MacDonald Cabinet, the British Minister of Labor, himself an official of the coal miner's union, made many emphatic statements of the value of the slow carbonization process and at one time stated it would be possible for the British coal mines, by treating the coal mined, to supply a superior fuel, and, from the oil extracted, furnish a quantity of gasoline equal to the present importation into the British Isles. Reports were made of actual tests made at the Welsh coal mines from which results were reported that were parallel with those obtained by the local tests mentioned.

BOYD'S BOOK ON GASOLINE

T. A. Boyd, head of the Fuel Section of the General Motors Research Corp., at Dayton, Ohio, has written a book, entitled "Gasoline," which tells the story of the motor fuel from the oil well, through the various refining processes, into the underground tanks of the dealers, and finally into the automobile itself. The book explains how the car owner can get more mileage out of his gasoline, how American cars are overfed just like American people, why 20 miles an hour is the most economical speed, what really happens inside the engine the dangers of gasoline, the best way to put out a gasoline fire, where we will get gasoline if the oil supply gives out, and a host of additional facts about "the ideal motor fuel" as Mr. Boyd terms it.

Through the Keen Eye of the Microscope!

A micro-photograph of the steel in a set of SPANG WELDLESS Jars magnified 100 diameters. Note carefully how uniform the steel is in structure, how each atom is cemented so that it will not loosen easily or be torn away. This structure means strength, life and durability.



The above is a micro-photograph of the steel in an ordinary set of welded jars magnified 100 diameters. It shows clearly the make-up of the crystal and different ingredients of the steel, and how they vary.

Spang Weldless Drilling Jars

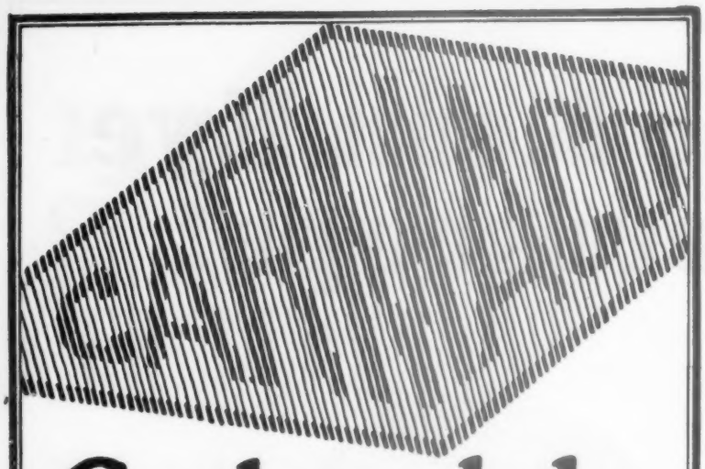
Give:

Excellent Joints
Greatly increased footage drilled
Elimination of Jar Fishing Jobs
Reduction of drilling risk
Three to five times as much service as other jars
Increased profits

Sold by Leading Supply Houses Everywhere

Spang & Company

Butler, Penna.



Carbondale Refrigerating Machinery *for* Refiners

WHEN you buy Carbondale filter presses, chilling machines, sweating pans and cold settling apparatus you buy engineering experience, gained over a period of thirty years spent in building the greatest percentage of refrigerating machinery used by refiners today.

Our long specialization in this field is your guarantee that the desired results will be fully and economically produced when you install Carbondale Refrigerating Machinery.

The Carbondale Machine Co.
Carbondale, Pa.

SALES OFFICES:

New York Chicago Kansas City Pittsburgh
New Orleans Houston Dallas Los Angeles
Baltimore Philadelphia Buffalo

You'll find us in the phone book

SCAVENGING VALVES TO AVERT EXPLOSIONS

(Continued from Page 74)

collection of the vapors and oil. When cause detonation. A critical mixture is always unstable and does not depend upon pressure and temperature for its action and might be detonated at atmospheric conditions through molecular friction alone. After detonation this mixture will burn smokeless and with white heat and as a conse uence both the temperature and pressure rises as a result of the action and not as the cause.

Should the area of critical mixture lie in the center of the tank surrounded by free air it will be safely cushioned. Should the tank contain a sufficient amount of combustible vapors, lying in strata as suggested, ignition of the unstable and critical mixture can take place and due to the over richness of the adjoining lower strata and over leanness of the adjoining upper strata the action may not go through the entire contents of the tank and the increase in pressure will be within the limits of the safety valve. If the conditions are such that detonation of the critical mixture will fire the entire series of strata, the result will necessarily be a violent explosion due to heat and pressure being generated in excess of the capacity of the safety valve.

Degrees of Explosions

There are, therefore, various degrees of explosions possible as a result of the accumulation of these series of hydrocarbon vapors and gases. Those explosions that take place without damage are generally considered by plant men as being automatic signals that it is time to clean out the oil and water accumulations in the receiver. It is quite possible that these slight explosions can even take place in the receiver, and especially along the air lines where traps have been formed, without the fact being noted at the time. Whenever this action has taken place the result has been the formation of a quantity of C O or C O^2 gas and it is this gas that has caused so many deaths in mines where compressed air was being used for tools and machines. Invariably, when an air receiver explodes at a mine, men are gassed in the underworkings. Deaths have been caused under these conditions even when the receivers did not suffer rupture.

Safety valves, as such, come into action after the explosion takes place. They do not prevent the formation of volatile vapors that causes the explosion. When the amount of vapor is slight, or conditions are not just right for an extensive explosion the usual safety valve will release the pressure and thereby prevent the building up of heat which will bring the heavier mixtures into action. Whenever explosions have taken place wrecking the air system and the plant, pressure in excess of 750 pounds per square inch have been indicated by damage done and by concave heads of tanks being reversed. When conditions are just right for a violent explosion any number of safety valves will not prevent it. These valves prevent some explosions but as they cannot and do not prevent all explosions, they must be considered only a partial remedy.

Seeking a Remedy

In seeking a remedy for receiver explosions we are faced with certain obvious facts, some of which point to the solution. We cannot get along without lubrication. If we could lubricate with material that did not contain hydrocarbons, alcohols, glycerines, or fatty oils these explosions would not take place. With the present mineral lubricants we can reduce the feed sufficiently to prevent conditions which might result in an early explosion, and we might then cause damage to the machinery by depriving them of needed lubrication. Also we cannot guarantee that the compressors and tanks shall be free from shocks and excessive temperature rises from which ignition might take place. It is, and has been obvious for years, that these explosions will not occur if air and oil vapors are prevented from accumulating and forming combustible gases. The remedy lies in introducing preventative measures. Pockets and traps can be guarded against in the air lines. As regards the receiver, we can introduce means for constantly scavenging the tank and thus can prevent the accumulation of oil vapor and vapor mixtures, thereby preventing explosions.

This receiver scavenging method was developed as the direct result of an explosion. When applied to air receivers where explosive mixtures should form it has prevented their formation over a period of seven years. The details are of interest in this connection. While working on one of the experimental engines of a new cycle, an explosion took place in the 12-inch by 24-inch receiver for 200-pound air. Force was generated that was sufficient to blow out a fitting in the line at the compressor cylinder. This fitting struck a gentleman standing 20 feet from the engine in the neck with the force of a bullet, severely injuring him. The receiver was examined and found about one-fifth full of oil which had apparently reformed from the oil vapors thrown off by the compressor piston. The receiver had been subjected to flame and was very hot after the fitting had blown off, its condition not having been noted immediately before the explosion. The receiver and the oil in it was held for further experimentation and a new fitting was made very much stronger than the first. All parts of the system were strengthened and a pop safety valve was put on the line. The engine was then started and within two hours the mixture again carbureted in the receiver, the explosion being of such force as to greatly increase the temperature of the receiver; the safety valve in this instance relieved the pressure before damage was done. The oil in the receiver was not burned and the temperature rise did not take place before the safety valve blew off. The gas and combustible vapors did not come from the oil that had already collected in the receiver, because in this case a temperature in excess of 500 degrees Fahrenheit would have to be maintained for a long enough period to heat the entire body of the oil to that degree before ignitible vapors would have been produced. It is questionable if such conditions could obtain. In this case temperature was not noted until after the explosion and then much less than would have been necessary to secure vapors from even a small amount of the kind of oil used on the engine.

Scavenging Valves

A scavenging valve was then made and placed on the air receiver. With this valve the air enters and leaves the receiver through the same opening. The mechanism of the valve allows the pressure to open a passage for the compressed air to the top of the tank. The outlet opening has fitted to it a length of pipe that goes to within a few millimeters of the bottom of the tank. Any air flowing from the pump or compressor to the air system, therefore, has to pass from the top of the tank entirely to the bottom before it can leave. This effectually sweeps all vapors and gases from the receiver and keeps it full of pure fresh air with only a minute amount of oil and vapors that, however, do not have a chance to collect and stratify.

These scavenging valves have been fitted to the tanks on all experimental engines that have been built during the development of this new cycle. The air receivers of these engines have never carbureted. During the testing of experimental engine No. 8 of 400 B. H. P., which ran for over 4,000 hours, there was no carburetion in any of the receivers, all of them being fitted with the new scavenging valves.

This scavenging valve is an integral part of the tanks of a new gas and oil engine which will shortly be offered to the public. The value of such a valve is so obvious that it will be offered for general use on the receivers and tanks of other engines. It is thought that a development that has to do with the safety of life and property, should have wider application than could be given

An Apology is Due

The Oil and Gas Journal regrets it was not advised at the time of publishing the April 16 issue containing the three-color plate of the Oil Sands of Oklahoma, there would be such an extraordinary demand for that edition.

Despite the printing of a large number of additional copies in anticipation of a special interest, the supply proved utterly inadequate and we were obliged to inform applicants that the edition was exhausted the day after publication.

Many of those anxious to secure a copy told of fruitless search around the newstands. We are sorry they were put to this inconvenience, the more so since their trouble was without result, even at this office.

At the same time it may be recalled that repeated warnings have been printed in these pages advising the only certain precaution against disappointment in getting specially wanted issues of The Oil and Gas Journal—by becoming regular subscribers.

As our readers know this map of Oklahoma sands was but one of frequent features constantly appearing in The Oil and Gas Journal from time to time. There will be many others. Since it is manifestly impossible to estimate demand outside our subscribers in advance and The Oil and Gas Journal is too expensive a publication to print unnecessary copies, we can only repeat the advice to insure against disappointment by filling out the blank below:

Order Now!

It Will Help You!

Order Blank

The Oil and Gas Journal
Tulsa, Okla.

You are hereby directed to mail The Oil and Gas Journal to me for.....year. Enclosed find remittance $.....

Classify my interests as checked by me.

.....Producing .....Refining
.....Equipment .....Marketing

Name.....

Address.....

City.....

U. S. or Mexico	
One Year . .	$6.00
Six Months .	3.00
Three Months	2.00
FOREIGN . .	7.00

AJAX·ROPE·CO INC.

Ajax Keeps the Wheels Moving with Werwel

Down in the Oil Country, where roads are impassable and Rope is given severe use,

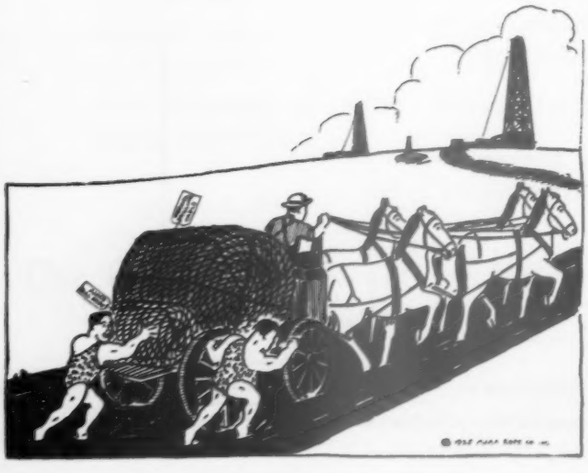
AJAX SERVICE
and
WERWEL QUALITY

are recognized as supreme in merit.

The wheels are kept moving when Ajax delivery facilities and products are used. WERWEL is the finest drilling cable made—A strong statement that we are always ready to prove.

AJAX ROPE CO., Inc.
149 Broadway
New York, N. Y.

R. S. O. Lawson, President.



it by confining its use exclusively to the inventor's own type of engine.

It is hoped that the suggestions contained in this paper will make clear the reasons for the many air compressor explosions that have occurred in the past, the origin of which were thought to be mysterious. It is also hoped by the authors that the solution to the problem of explosions in air receivers determined by a long series of tests will appeal to all engineers.

THOMAS MIDGLEY, JR., ANSWERS ATTACK

(Continued from Page 72)

statment of Mr. Midgley that he had sought a retaining fee to be engaged as an investigator of ethyl gasoline, said:

"They wrote me two or three years ago asking if I would like to make an investigation for them. I replied that I would do so, but that I believed the results of my investigation could scarcely fail to show that the public use of leaded gasoline would involve an intolerable hazard to public health. Apparently the Ethyl Gas Corp. did not wish an investigation from that standpoint, for I have heard nothing further from them."

PETROLEUM RESEARCH AWAITING PROGRAM

(Continued from Page 78)

garding the two-stroke cycle engine, Mr. Chase says:

Two-Stroke Cycle

"One promising method of obtaining higher torque at low speed is by the use of a two-stroke cycle, which, by the way is also one way of improving economy at part low, since the two-stroke cycle is inherently a constant compression cycle. While many engineers consider the two-stroke cycle as altogether out of the question for automobile engines, Edward C. Newcomb has been able to produce some extraordinary results with his type of engine. This car had a single cylinder engine which in the chassis about the size of a Ford chassis proved itself capable of traveling as much as 60 miles on a gallon of fuel without resort to coasting or other abnormal driving. A two-stroke engine presents a number of problems but has also a number of advantages which should not escape consideration. Engines built on this cycle not only can be made highly efficient at part low but, if comparatively of high torque, at low speed and have lower friction losses because of the low speed."

If motorists would study carburetion present cars could give on the average considerably greater mileage. Not only does curburetor adjustment afford opportunities for increased mileage but it decreases the waste gases coming out of the exhaust, in other words, the monoxide gas. The Bureau of Mines tests showed that improper carburetor adjustment was responsible in most cases for the major part of the wasted power of gasoline. The average carburetor was found to be adjusted too far on the rich side, or, in other words, an insufficient amount of air was admitted with the gasoline, for good economy and proper combustion.

The average automobile driver demands first of all, power and flexibility, says the Bureau of Mines. He usually sets his carburetor rich enough to give these properties under the most adverse conditions of driving, as slow speeds in traffic, and even to offset the troubles of a cold motor. In this manner, he usually obtains an adjustment that from an economical standpoint is too rich and unnecessary for the major part of his normal driving conditions, after his motor has become warmed. This however, is not manifest in the power but only in the gasoline consumption of which the driver seldom takes special note. Additional reason for the rich adjustment is that the present day automobile, with its many auxiliary appliances, as hot spot, choke, preheated air and so forth, are but little understood by the average driver.

Checking Fuel Waste

The Bureau of Mines has developed a simple method of checking up the amount of fuel being wasted. This exhaust gas analysis method for making adjustments has been applied to many makes of cars and trucks and has demonstrated its effectiveness in gasoline saving. In some cases the miles per gallon have been increased over 40 per cent. A saving of over 22 per cent of the gasoline used per ton mile was effected after adjustment of a fleet of coal trucks in actual operation. The method is adaptable for use of companies employing automobile fleets and for service garages and stations, but difficulty in obtaining the apparatus and familiarizing himself with the procedure does not make it so practical for the average motorist. The Bureau of Mines, however, has issued some simple rules for guidance of the motorist.

From the standpoint of the past and in view of the fact that gasoline continues to be cheap, it is doubted whether the average motorist will pay much attention to carburetion from the aspect of saving on his gasoline bill, but the work of education should be pressed with that much more vigor. Much is being done and much more can be done by the automotive industry to impress this matter on the motorist.

BELGIUM FIRM TO MAKE INGERSOLL-RAND ENGINE

A connection of much significance to the engineering world has lately been arranged between Carels Brothers of Ghent, Belgium, and the Ingersoll-Rand Co. of New York by which the Belgian concern will have the right to manufacture the well known Ingersoll-Rand solid-injection type of oil engine.

Carels Brothers, organized in 1875, have long enjoyed a prominent place in the industrial life of Belgium. They were among the first of the European licensees to work under the Diesel patents; and Carels-Diesel engines have won wide recognition in many fields of service because of their excellence. Even so, Carels Brothers have sought to strengthen their enviable position in this department of engineering by means of the working rights obtained from the Ingersoll-Rand Co.

The interesting feature of this arrangement is that Europe has now come to America for the latest and the highest developments in heavy-oil engines. Thus American skill turns the tide of technical obligation by giving the fruits of its labor to Europe—the land in which the heavy-oil engine originated.

"GAS" STATIONS FOR GERMANY

American wayside gasoline stations soon will be found along German highways, and it probably will not be long before the free air sign will also appear. Gasoline today is served from shops in the clumsiest sort of way, but the increase in motor traffic is turning German eyes toward the quick and economical methods so generally used in the United States, and trade journals are showing many pictures of model stations along American highways. A German firm has bought a number of American gasoline service station pumps, and will install them.

TO EXCHANGE STOCK

OKLAHOMA CITY, May 4.—An application to exchange 35,000 shares of its capital stock for 960 acres of leases containing one gas well has been made to the State Issues Commission by the Vernon Oil & Gas Co. of Blackwell, a new corporation with a capital stock of $50,000. The application reveals that the Wilson Gas Co. and the Detroit Gas & Fuel Co. of Blackwell are stockholders in the Vernon company. C. D. Wilson is president; W. M. Vickery, vice president, and H. L. Spencer, secretary.

FITTINGS You Can Depend Upon

Ajax Flange Union for High Pressure Pipe Lines.

Extra Heavy All-Iron Oil Country Cock.

Jarecki Mall. Iron Lip Unions are manufactured with the care that insures Perfection

Jarecki Malleable, Cast Iron and Brass Pipe Fittings are made in all sizes and weights.

When you look upon ordinary fittings you feel that you *may* get the service you expect.

When you look on Jarecki fittings you *know* you will.

The Jarecki mark, on malleable fittings, tells you that the material is *air furnace* malleable —free from all the impurities and defects caused by cupola-melting.

On cast iron fittings the Jarecki mark indicates a heavy, close-grained product built for hard usage.

On all oil industry fittings, the Jarecki mark signifies a dependable line, honestly built, fully tested and absolutely guaranteed. Try them and compare results.

"Everything Used or Needed About an Oil or Gas Lease"

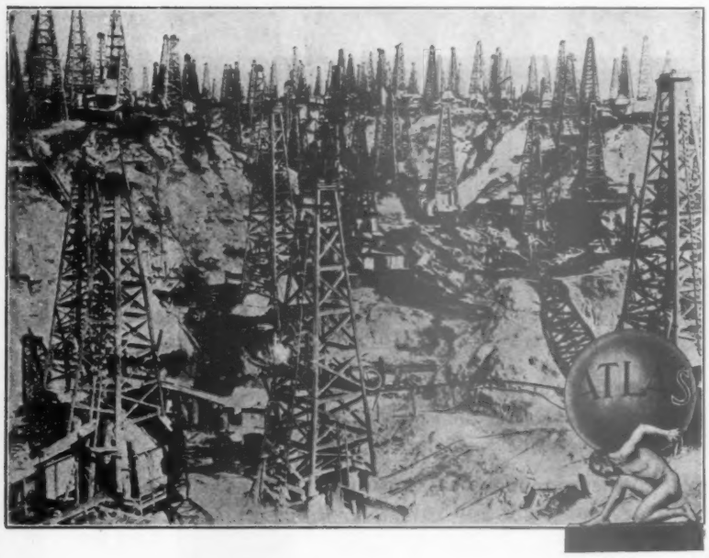
JARECKI MANUFACTURING COMPANY
Erie, Pa., U. S. A.

St. Louis, Pittsburgh,
El Dorado, Tulsa, Eastland

JARECKI

VALVES AND FITTINGS

"NOTHING FINER FOUND—ABSOLUTELY ROUND"



"Flowing Gold" and Atlas Valve Balls

ROMANCE in the oil industry has resigned to cold, hard facts. Present day producers are vitally interested in any equipment which will insure the utmost reliability and make possible continuous, uninterrupted production at the lowest cost.

That's why Atlas Valve Balls for Working Barrel Valves are rapidly coming to the front in this industry as the best insurance against costly failures. They have built into them the qualities which insure long life in any field under the hardest going.

Just as they have exceeded the expectations of leading producers so will they make good in your Working Barrels. Get Atlas Valve Balls today—it's the wisest investn ent you can make to insure your share of the earth's "flowing gold."

1385

Atlas Ball Company

Glenwood Ave. at Fourth St.
Philadelphia, Pa.

KENTUCKY-TENNESSEE

(Continued from Page 58)

they expect to drill three wells, the first to be started immediately.

With the early spring and improved roads throughout Clay and Jackson Counties, the oil business has received a new impetus. Celina is becoming quite an oil headquarters, and an Oil Operators and Business Men's Club has already been formed there. Additional operators are coming into the field, trading is active, and the summer will undoubtedly see many wells completed.

Week's Work

A brief of the week's work in these fields show 38 completions, 8 failures, 1 gasser and 29 producing wells with a combined flush of 352 bbls. Compared with the previous week this shows the same number of completions, 3 more producing wells, 27 bbls. decrease in production, 1 less dry hole, 3 fewer gas wells and 1 less abandoned hole. The completions were distributed as follows:

County—	Comp.	Wells	Prod.	Dry	Gas	Abd.
Barren	10	7	61	3	0	0
Owensboro dist.	6	6	47	0	0	0
Warren	6	6	69	0	0	0
Lee-Owsley	2	0	0	2	0	0
Lawrence-Johnson	2	1	50	1	0	0
Greenup	2	1	6	0	1	0
Logan	1	1	15	0	0	0
Wayne	1	1	7	0	0	0
Wolfe	1	1	5	0	0	0
Lawrence-Johnson	1	1	10	0	0	0
Allen	5	4	82	1	0	0
Clay, Tenn.	1	0	0	1	0	0
Total	38	29	352	8	1	0
Last week	38	26	379	7	4	1
Difference	0	3	27	1	3	1

Barren County

One of the most interesting completions of the past week is the Esslinger Oil Co.'s No. 3 Jones, in the Coral Hill district, 8 miles north of Glasgow, in Barren County. It was finished at 446 feet, 37 feet below the black shale, where 9 feet of pay sand was encountered.

The sand was shot with 30 quarts of nitro and after the well stood 25 minutes it filled up 80 feet. After being cleaned out, tubed and put on the pump it filled the tubing, 350 feet of lead line and put 5 bbls. in tankage the first evening. Since then the well has been producing 12 bbls. of 39 gravity crude daily, which is a little better record than the average Barren County well. The Paragon Development Co. is making arrangements to extend its gathering lines from the Hall Baker Pool to this new strike as well as to the Nichols and other producing leases at Coral Hill. The building of this line will stimulate operations between Coral Hill and the Hall Baker Pool, which territory now looks promising.

The Esslinger Oil Co. is spudding No. 4 Jones. To date this concern has drilled seven wells in Barren County, six of which were dry holes.

In the Emery-Moore district, west of Glasgow, the Star Oil Co.'s No. 18 Ritchie made 4 bbls. on power at 530 feet, 180 feet below the shale; same concern's No. 1 Joe Star, Sr., dry at 550 feet. Nos. 19 and 20 Ritchie drilling at 420 and 175 feet, respectively; No. 6 Joe Star is spudding. Ziegler Brothers finished No. 1 Green for a dry one in the deep pay and got a 3-bbl. starter in No. 5 Drennan at 512 feet. On the Burton place, north of Oil City, Shriver and others' No. 1 was dry at 638 feet. A small showing was had at from 490 to 505 feet but was passed up.

In the Gorby Pool, Porter's No. 4 McLaughlin and T. L. Gorby's No. 3 Cassidy made 15 bbls. each from the deep sand at 180 feet below the black shale.

In the Hall Baker Pool, north of Glasgow, the Wood Oil Co.'s No. 2 Duff, north of No. 6 W. M. Church, pumped 9 bbls. at 550 feet. McCandless, Harley and others' No. 1 Wood tested 3 bbls. at 569 feet, after shooting the sand from 541 to 560 feet with 30 quarts. Shale was from 380 to 420 feet.

Owensboro District Active

In the Owensboro district, the recent completion of the Colonel Powers well in the Barlow sand, 2½ miles north and east of Whitesville, in Ohio County, has created considerable excitement and a large number of operators have gone into that section during the past two weeks to give the field the once-over. This district is bound to get a large play this summer, as the older wells are holding up in fine shape and the oil is coming from a true sandstone. So far, three sands are showing production, the stray, the Jett and the Barlow. The latter sand is picked up at around 750 feet and the former at 450 feet. The stray is a shallow sand encountered above the Jett.

During the past week six wells were finished in the Owensboro Field, the best of which is C. E. Daugherty's No. 4 Widow Crow, in the Swope-Powers Pool. It is pumping 12 bbls. from the Barlow sand at 800 feet. In the same area, the Pennsylvania-Indiana Oil Syndicate's No. 2 J. H. Phillips showed for 10 bbls. in the stray sand, between the two limes, but is being drilled down to the Barlow pay.

At Pellville, the Kentucky Oil Co.'s No. 17 Amanda Stewart is pumping 3 bbls. from the Barlow. At Herbert school house, the Panther Creek Oil Co.'s No. 9 F. V. Miller will make 4 bbls. from the Barlow sand. This is the lightest well on this property and is considered an edge well. The Pennsylvania-Indiana Oil Co.'s No. 9 Virgil Miller is rated at 8 bbls. from the Barlow sand. It was completed at 700 feet, where it showed 21 feet of sand.

In the vicinity of Collier Station, C. A. Leeper brought in No. 2 J. S. Collier, in the Jett sand, for 8 bbls.

The Triangle Oil Co. is locating a rig on No. 3 Evans, at Collier Station, and the Wood Oil Co. is making preparations to drill a test on the Holbrook farm, adjoining its Bartley lease, in the same vicinity.

In the Swope-Powers Pool, Nutty & Pyle are moving a rig to drill No. 2 Swope Brothers, and No. 2 Colonel Powers.

Cumberland-Monroe-Clinton

In spite of the pipe line being unable to run all of the oil in the Cumberland, Monroe and Clinton Field, and congestion of field storage on a number of leases, there has been a rapid increase in production in all pools during the past 10 days. Conservative figures compiled by leases show a total of nearly 1,400 barrels per day on April 20.

The outstanding development of the past few days has been the wells of the Vedder Oil Co. on Fannis Creek, just over the Cumberland line in Clinton County. No. 3 Tompkins was drilled through the second Sunnybrook where a showing for a 2-bbl. well was the result. After a 20-quart shot from 458 to 472 feet, the well made 200 bbls. the first 24 hours on the beam and at this writing is reported doing 5 bbls. per hour on the power. Tools were moved over No. 2 on the same farm at once to deepen it to the second Sunnybrook. After the drill penetrated 12 feet the hole started filling up rapidly and the well was capped in on account of tankage. It was originally finished in the Anderson sand, at 390 feet, in July, 1924, with an initial production of 95 bbls. No. 1 made 180 bbls. from the second Sunnybrook. The Vedder company, under the supervision of Hiland R. Smith, is building extra tankage in addition to its battery of six tanks already on the ground to take care of flush production over the amount which the pipe line can handle.

M. L. Gartlan, trustee, of the Maude Blythe farm, at Kettle Creek, reports that No. 3, which flowed at the rate of 14 bbls. per hour when opened up, has drilled itself in and is making 32 bbls. an hour.

McClintock, Reid & Heckathorn's No. 1 J. W. Hughes, on Pulsey Creek, is on top of the first Sunnybrook. This is an important test and is located on what is pronounced by a well known geologist to be one of the best domes in Cumberland County.

Bear Creek

Treat & Simmon's No. 1 Garner, south of the Dickens, is dry at 669 feet and is shut down awaiting word from the owners. If this well is carried deeper and proves productive it will extend the pool to the south.

Pittsburgh parties' No. 1 F. F. Smith has been shot in the second Sunnybrook, where it is estimated good for 25 bbls.

(Continued on Page 94)

McCarty Oil Company

428-430 BOB WAGGONER BLDG.
PHONE 2880
Wichita Falls, Texas

April 14, 1925

Star Drilling Machine Company
Chanute, Kansas.

Gentlemen:

In the 38ST, your company has at last perfected a clean out machine the Oil Man has been waiting for. It will do all you claim for it.

Recently we checked a move with the Star 38 Super-Tractor. We tore down from our No. 1 Cook and moved two miles to our Wilson No. 5 and set up in exactly two hours. That is indeed a record move for us and such a saving over moving the old steam machine.

The four cylinder motor in your Star No. 38 Super-Tractor has plenty of power, runs cool and uses only about ten gallons of gasoline in a nine hour shift.

Mr. Martin Salyer and Mr. C. O. Keys. who operate our machine are both drillers and have used steam for years. It is surprising how well they like the gasoline machine and the results they are getting from it. Mr. Salyer says that the Super Tractor is the next thing to a Standard Rig and better in one respect - you can move it.

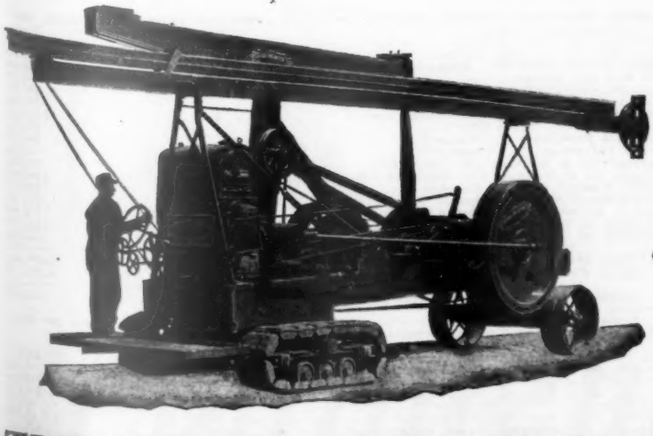
We are more than pleased with our experience with the Star No. 38ST. From time to time we will advise you further as we intend to keep a check on the machine cleaning out our 1600 ft. wells.

Yours very truly,

McCARTY OIL COMPANY

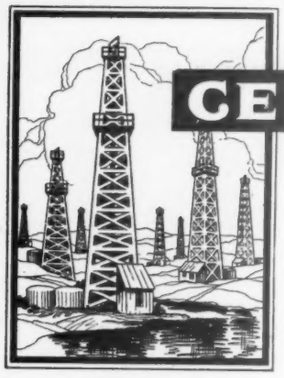
By J. F. Peterson

Below is illustrated the Star No. 38ST Super-Tractor with 4 cylinder motor for cleaning out to a depth of 2,500 feet and drilling to 1,000 feet. Still larger sizes in Star Gasoline Super-Tractors are available for handling heavier tools and deeper work both in cleaning out and drilling.



THE STAR DRILLING MACHINE CO., Akron, Ohio

Branches: Chanute, Kan.; Long Beach, Calif.; Portland, Oregon. Export Office: 2 Rector St., New York City



Use MONARCH
CEMENT
FOR ECONOMICAL CONSTRUCTION

An Economical Aid In Oil Field Construction

The security and lasting permanence assured by concrete justify its extensive use throughout the Mid-Continent Oil Field. The proven quality, economy and dependability of *MONARCH* Cement in oil field work more than justify your using it on every job.

The ever-sure strength and quick setting of *MONARCH* insure you better concrete work at a saving of time and money.

MONARCH has stood every test to which it has been subjected, both on top and underground. The first trial will prove to you that it is really the King of Portland Cements for all oil field uses.

Use it for—

cementing casings—
cementing surface pipes—
bases for all machinery—
rig foundations—
permanent buildings—
pump jack bases—
rod line posts—
anchoring rig guy wires—
building foundations—
floors—

Ask your nearest dealer for *MONARCH* Cement and be certain of safety, permanence and economy. Write us direct for further information.

THE MONARCH CEMENT CO.

General Offices and Plant

Humboldt Kansas

Sales Office:

Tulsa, Okla.
211 Kennedy Bldg.
Phone 3-0638

Oklahoma City, Okla.
1935 West 11th St.
Phone 4-6813
P. L. Langworthy

MONARCH
THE KING OF PORTLAND CEMENTS
CEMENT

GULF PORT SHIPMENTS IN MARCH GAIN 1,451,778 BBLS. OVER FEBRUARY

HOUSTON, Tex., April 27.—A total of 14,389,991 bbls. of refinery products and crude oil were shipped by water from Gulf Ports during March, which is an increase of 1,451,778 bbls. over February. Refined totaled 8,136.698 and crude 6,253,293, which is an increase of 652,595 bbls. in refined and of 779,183 bbls. in the crude movement.

Included in the gross for last month were 1,686,968 bbls. of refined and crude consigned to foreign ports. The exports were made up of 1,536,034 bbls. refinery products, under which head is gas oil, fuel and other grades. The export crude consignments were 150,934 bbls.

The plants in the Port Arthur-Beaumont district furnished 6 207,857 bbls. of the gross, more than 4,750.000 being refinery products. The Texas City-Houston ship channel terminals and refineries contributed better than 33⅓ per cent of the gross, the crude consignments exceeding the refined. Crude shipments total 3,892 080 bbls. From the Louisiana ports 2,710,394 bbls. were loaded, the crude reaching a total of 1.040,596 bbls.

The crude shipments included consignments from the Oklahoma fields, but the bulk of it came from the Mexia, Powell, Wortham fields and from the Luling and Webb County districts. The northeast Texas product comes to the coast through pipe lines. The Luling crude is shipped to Houston in tank cars and loaded on tankers here. The Webb County crude is moved in tank cars to Aransas Pass and then sent in barges to Texas City, Sabine and Port Arthur for reshipment in tankers. The crude goes to the refinery centers on the Atlantic Coast.

The following table gives the shipments of each company:

From Port Arthur
By The Texas Co.
Refined

Destination—	Gross Bbls.
Coastwise	1,241,821
Export	352,677
Total	1,594,498

Crude

Coastwise	387,952

From Port Arthur
By Gulf Refining Co.
Refined

Coastwise	1,791,895
Export	123,520
Total	1,915,415

From Beaumont
By Magnolia Petroleum Co.
Refined

Coastwise	*1,235,400

*464,927 bbls. mfg. fuel oil.

Crude

Coastwise	121,146

From Sabine
By The Sun Co.
Crude

Coastwise	152,273

From Port Neches (Orange Crude)
By Humble Oil & Ref. Co.
Crude

Coastwise	210,330

From Smith's Bluff
By Pure Oil Co.
Refined

Coastwise	141,927

Crude

Coastwise	448,916

From Texas City
By Humble Oil & Ref. Co.
Crude

Coastwise	1,963,395
Export	38,134
Total	2,001,529

From Texas City
By Vacuum Oil Co.
Crude

Coastwise	218,755

From Texas City
By Swiftsure Petroleum Co.
Crude

Coastwise	366,429

From Texas City
By Pierce Petroleum Co.
Refined

Coastwise	15,073

From Texas City
By Marland Oil Refining Co.
Refined

Export	73,968

Crude

Coastwise	194,746
Export	112,800
Total	307,546

From Baytown (Refinery)
By Humble Oil & Ref. Co.
Refined

Coastwise	553,544
Export	395,275
Total	948,719

Crude

Coastwise	493,199

From Houston (Pasadena Terminals)
By United Central Oil Corp.
Crude

Coastwise	†488,068

†256 889 bbls. account of Atlantic Refining Co. (Luling); 231,169 bbls. account of Beacon Oil Co., Boston (Luling).

From Houston (Galena Terminals)
By Galena-Signal Oil Co. of Texas
Refined

Coastwise	140,000
Export	40,000
Total	180,000

From Houston (Sinco Terminals)
By Sinclair Oil Refining Co.
Refined

Coastwise	336,504
Export	25,326
Total	361,830

Crude

Coastwise	16,574

From Baton Rouge (La.) (Refinery)
By Standard Oil of Louisiana
Refined

Coastwise	947,042
Export	620,442
Total	1,567,484

Crude

Coastwise	1,040,596

From New Orleans (Storage)
By Standard Oil of Louisiana
Refined

Export	102,314

RUSSIAN OIL OUTPUT

The gross petroleum production of Russia during the first quarter of the economic year 1924-25 (ended January 1, 1925), amounted to 1 655,420 tons—an increase of 17 per cent over the output for the corresponding period of the preceding year—according to statistics published by the All Russian Naphtha Syndicate. During the past economic year the Soviet is reported to have shipped abroad 712,000 tons of oil, compared with 210,000 in 1922-23. The president of the syndicate has stated that up to January of this year the syndicate concluded contracts abroad for the sale of 1,020,000 tons of oil products.

SUMMARY

Water Shipments of Refinery Products and Crude From Gulf Ports During March, 1925

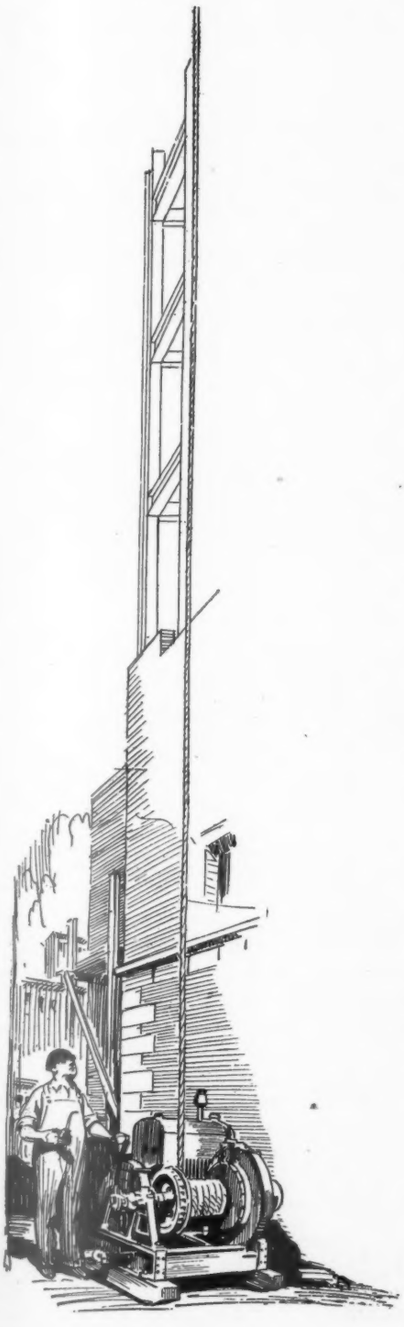
Company and Port—	Refined	Crude	Total
The Texas Co., Port Arthur	1,594,498	387,952	1,982,450
Gulf Refining Co., Port Arthur	1,915,415	.....	1,915,415
Magnolia Petroleum Co., Beaumont	1,235,400	121,146	1,356,546
The Sun Co., Sabine	.....	152,273	152,273
Pure Oil Co., Smith's Bluff	141,927	448 916	590,843
Humble Oil & Refining Co., Port Neches	.....	210,330	210,330
Humble Oil & Refining Co., Texas City	.....	2,001.519	2,001.519
Vacuum Oil Co., Texas City	.....	218.755	218,755
Swiftsure Petroleum Co., Texas City	.....	366,429	366,429
Pierce Petroleum Co., Texas City	15,073	.....	15,073
Marland Oil & Refining Co., Texas City	73,968	307.546	381,514
Humble Oil & Refining Co., Baytown (Refinery)	948.789	493 199	1,441,988
United Central Oil Co., Houston	.....	488,068	488,068
Galena-Signal Oil Co., Houston	180,000	.....	180,000
Sinclair Refining Co., Houston	361,830	16,574	378,404
Standard of Louisiana, Baton Rouge	1,567,484	1,040,596	2,608,080
Standard of Louisiana, New Orleans	102.314	.....	102,314
Total March	8,136.698	*6.253,293	14,389.991
Total February	7,484,103	5,454,110	12,938,213
Difference	652,595	799,183	1,451,778

*Atlantic Oil Producing Co.'s crude shipments from Port Arthur and Arco not available. Will be included in April report.

EXPORTS

The Texas Co., Port Arthur	352,677	.....	352,677
Humble Oil & Refining Co., Texas City	.....	38,134	38,134
Marland Oil & Refining Co., Texas City	.....	112,800	112,800
Humble Oil & Refining Co., Baytown	395,275	.....	395,275
Galena-Signal Oil Co., Houston	40,000	.....	40,000
Sinclair Oil & Refining Co., Houston	25,326	.....	25,326
Standard of Louisiana, Baton Rouge	620,442	.....	620,442
Standard of Louisiana, New Orleans	102,314	.....	102,314
Total March	1,536 034	150,934	1,686,968
Total February	1,180.827	269,186	1,450,013
Difference	355,207	118,252	236,955

Dependable Power for Every Purpose



A Rugged Power Unit

For heavy duty wherever power is required, over the widest range of industrial uses, Red Seal motors are built to meet the most exacting requirements.

Sturdy in structure, they have the rugged dependability that industrial uses demand. Long life, economy of operation and upkeep, slight attention, high power, flexibility—all are Red Seal advantages.

The long record of Continental Motors in the manufacture of millions of power plants that have stood the severest tests of time is the strongest guarantee of Red Seal quality.

You may have the fullest co-operation of the Continental Division of Industrial Engineering in the selection of any power plant to meet your needs.

Put Your Power Problems
Up To "Power Headquarters"

CONTINENTAL MOTORS CORPORATION

Offices: Detroit, Mich., U. S. A. *Factories:* Detroit and Muskegon

The Largest Exclusive Motor Manufacturer in the World

Continental Motors

GOODYEAR MEANS GOOD WEAR

You will find your drilling and pumping are done more efficiently and economically when you equip with Goodyear Belts. These belts are built to give powerful and trouble-free service, under the most exacting conditions of oilfield duty

Goodyear Mechanical Rubber Goods serve so well because they are designed and built with a full understanding of oilfield conditions and refinery duty.

They stand up to the job, they do their work efficiently and economically, and they wear a long, long time.

For service records, or for any other information about them, write to Goodyear, Akron, Ohio, or Los Angeles, California.

TRANSMISSION BELTS
Goodyear, Klingtite

HOSE
Air, Water, Steam, Gasoline, Fire and Mill

OIL SUCTION or DISCHARGE HOSE

ROTARY HOSE

PACKING
Asbestos and Rubber Sheet for both field and refinery service

PUMP VALVES

SLUSH PUMP SLEEVES

SWAB RUBBERS

GOODYEAR

KENTUCKY-TENNESSEE

(Continued from Page 90)

This is the first well to secure good production from this formation in the Bear Creek Pool and is creating much interest.

Freeman & McCormick have made two locations on the T. L. Bow farm which will be started at once. No. 1 is now being tested in the second Sunnybrook sand where a good natural well was obtained. It is thought when this well is shot it will make a big producer.

Sulphur Creek

The Kanawha Oil Co.'s No. 2 M. E. Coop, on upper Sulphur Creek, is flowing 50 bbls. per day at 225 feet below the Pencil Cave while it is being drilled deeper. It will be drilled to at least 375 feet below the Cave. The deepest producing well on Sulphur at this time is 373 feet below the Cave.

Raydure & Son's No. 4 M. E. Coop, offsetting No. 1 Coop of the Kanawha company, is drilling at 400 feet. Raydure's No. 2 Coop is the largest producing well in the county at present.

Wilcox Brothers have resumed drilling No. 1 Davidson, on Williams Prong, of Sulphur Creek, after a long shutdown. Same parties have staked off a location on the Melton tract, adjoining the Davidson, and will commence drilling it upon completion of the Davidson.

Carter Oil Corp. has a 15 bbl. pumper in No. 1 Huddleston-Payne at 370 feet below the Pencil Cave. It is just over the line from Raydure's No. 2 Coop.

Other Kentucky Wells

In Warren County, the Rockfield Oil Co.'s No. 4 Kimbro, 15 bbls. at 461 feet; Caskey & Pryor's No. 6 Price, 25 bbls. at 465 feet; Beaver Petroleum Co.'s No. 9 Covington, block No. 7, 3 bbls. at 330 feet; Zimmer's No. 9 John Covington, 1 bbl. at 371 feet; Wood Oil Co.'s No. 8 Grimes, 10 bbls. at 1,217 feet, shale from 1,307 to 1,132 feet and the sand from 1,207 to 1,215 feet; Westland Oil Corp.'s No. 28 C. A. Keller, 15 bbls. at 1,067 feet.

In the Frost Pool of Allen County, Meredith and others got a 70-bbl. starter on the Frost farm in the new sand at 85 feet below the shale; White Plains Oil & Gas Co.'s Nos. 18 and 19 A. T. Hinton, 5 and 3 bbls. at 399 and 320 feet, respectively; same company's No. 19 W. M. Foster, 4 bbls. at 361 feet; Gainesville Oil Syndicate's No. 3 W. E. Oliver, dry at 527 feet.

In the Pilot Knob section of Logan County, Mullin & Raegle's No. 7 Jim Peart made 15 bbls. after a shot at 606 feet.

A very dull week prevailed in the eastern division and as a result few wells were finished. Drilling is also on the down grade and outside of Greenup and Owsley Counties very little new work will be commenced until the price structure is higher.

In the North Weir Field of Lawrence and Johnson Counties, the Union Gas & Oil Co.'s No. 2 C. E. Frailey, district No. 32, is good for 50 bbls. flush at 780 feet; Hupp & Duff's No. 1 W. A. Bailey, dry in the Weir.

Two wildcat tests were reported dry in Lee and Owsley Counties; Mart Davis' No. 3 on White Oak Creek, and unknown parties' No. 1 on the J. S. Coombs tract.

In the South Weir Field, the New Domain Oil & Gas Co. got a 10-bbl. starter in No. 10 J. H. Gardner at 1,109 feet, in the Corniferous sand.

Wright & Bell's No. 2 Elam, district No. 3 Wayne County, 7 bbls. in the Beaver sand at about 400 feet.

EASTERN FIELDS

(Continued from Page 58)

Washington Township, Hocking County, the Gordon Oil Co. has completed and shot in the Clinton sand a test on the James Brimmer farm. It is 700 feet west of the Ohio Falls Oil & Gas Supply Co.'s test on the John Hoskins farm and good for 10 bbls. a day.

Duster In Hocking County

In the northwest quarter of Section 24, Starr Township, Hocking County, the Preston Oil Co.'s No. 23 on the R. E. and Blanch Longstreth farm is a duster in the Clinton sand. This location is one-fourth mile west of No. 15 on the same farm. In Newton Township, Licking County, I. J. Denbow and others completed a test on the Jacob Weiss farm, good for 4 bbls. a day in the Berea grit. In Harrison Township, Section 23, A. J. Weidman has started to drill another test on the J. M. Purdy farm. In Section 2, Hopewell Township, Licking County, the Empire Oil & Gas Co. has started to drill a test on the Amos Mohler farm, one-half mile south of the Midland Oil Co.'s second test on the Murray Bowser farm.

In Section 24, Ward Township, Hocking County, the Kachelmacher estate completed and shot in the Clinton sand No. 16 on the James J. Tracey estate. It failed to respond to the shot and if it makes a producer it will be very small. The Tracey farm has been furnishing some very good wells. In Section 29, same township, the Jacobs Oil Co. has started to drill No. 5 on the John Jacobs farm.

In Lot 4, Madison Township, Licking County, the A. H. Heisey Co. completed and shot in the Berea grit a second test on the G. H. Bolin farm. It is a light gasser. They are moving to the location for No. 3 on the same farm. In Section 13, Brown Township, Knox County, the East Ohio Producing & Refining Co. completed and shot in the Berea grit No. 7 on the Charles Scholes farm. It will not make better than a 2-bbl. pumper. In Union Township, Section 18, the Upham Gas Co. drilled its test on the Gustave Blubaugh farm through the Clinton sand and it is a duster. This location is 1 mile west of Brinkhave.

In Section 20, Liberty Township, Washington County, Charles L. Erb and others are drilling another test on the Harvey Scott farm. In Section 35, Lawrence Township, O. D. Jones completed No. 11 on the Carrie Bartelle farm, dry in the first Cow Run sand. In Newport Township, W. C. Noland completed in the Mitchell sand, No. 3 on the W. C. Noland farm, good for 2 bbls. a day. In Section 4, Grandview Township, Roy Everley & Co. are due in the sand at a test on the J. M. Everley farm. In Section 19, Liberty Township, William Huntsman and others have a dry hole at No. 3 on the Ora Erbes farm. In the same locality, Beeson Bailey and Co. are drilling on the James R. Heslop farm.

West Virginia

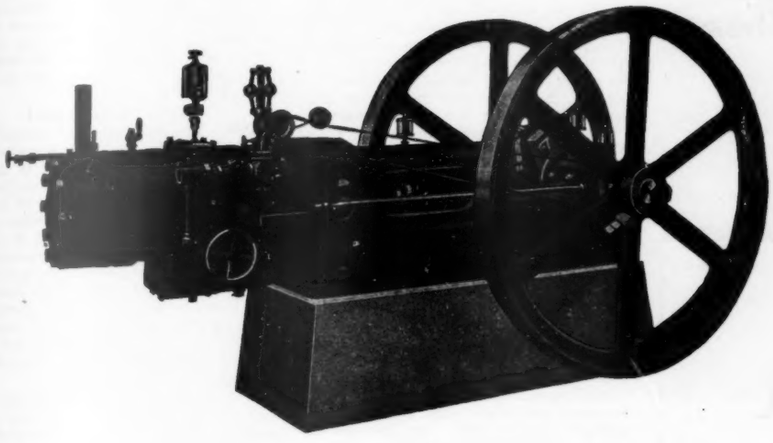
At the close of the week of development work West Virginia was able to furnish one producer better than the average size. It is the Silver Hill Oil Co.'s test on the John W. Steele farm, 8 miles west of Pine Grove, Greene district, Wetzel County. The well got its production in the Gordon sand and is good for 25 bbls. a day at a total depth of 2,575 feet. In Clay district, Ritchie County, Parker & Smith have a light show of oil and gas in the Big Injun sand at a test on the R. T. Haymond farm.

Roane County Completions

In Walton district, Roane County, L. C. Young and Co.'s test on the Samuel Shafer farm is dry in all sands. It has been abandoned. In Geary district, the United Fuel Gas Co.'s test on the James A. Cutlip farm is a gasser in the Big Injun sand. In Spencer district, F. F. McIntosh completed in the Big Injun sand his test on the W. E. Henderson farm. It is a fair gasser. In Walton district, the United Fuel Gas Co. got a gasser good for 1,000,000 feet a day when it drilled No. 7 on the E. E. and M. D. Dougherty farm through the Big Injun sand. In Spencer district, the Carter Oil Co. has a fair gasser in the Big Injun sand at a test on the C. Bartleet farm. In Reedy district, the Heck Oil Co. has started to drill No. 4 on the C. P. Davis farm. In Curry district, Putnam County, the United Fuel Gas Co.'s test on the James E. Johnson farm is a gasser in the Berea grit.

In Collins Settlement district, Lewis County, the West Fork Oil & Gas Co. scored a duster when it drilled its test on the T. R. Snyder farm through the fifth sand. In Grant district, Doddridge

(Continued on Page 106)



TICO ~ the well-mannered rough-neck

Titusville *Tico* Gas Engine

The Tico is a hard-boiled, rough-neck gas engine with the manners of a Beau Brummel.

The quick, unerring "pick-up" and easy control of the TICO enables it to throw its brawny strength into the job with no loss of motion or time. Its perfect balance and power gives it a surprisingly high over-load capacity.

Let the TICO work for you. It will prove all we claim for it and more.

Easy to start—Power to Pull—Built to Last

The TITUSVILLE IRON WORKS Co.
TITUSVILLE ~ PENNA.

TITUSVILLE EQUIPMENT

Oil Country Boilers
Steam Drilling Engines
Tico Gas Engines
Flapper Valve Pumps
Pumping Powers
Twin Drilling Engines
Rotary Machines Rotary Drawworks
Swivels Slush Pumps
Crown Blocks
Traveling Blocks
Rotary Drilling Specialties

TITUSVILLE OIL COUNTRY MACHINERY
RUGGED ~ ENDURING

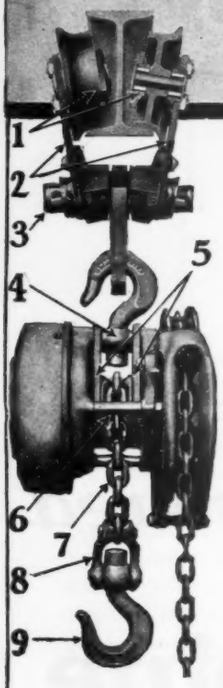
AFFILIATED COMPANIES FOR DISTRIBUTION

For Mid-Continent, Eastern, Western and Coastal Fields:
The Continental Supply Co.

For California:
The Republic Supply Company of California

For Export:
The Continental Well Supply Company,
No. 2 Rector Street,
N. Y. City

TRADE YALE MARK



For GREATER SERVICE

The Yale *Ball Bearing* Spur-Geared Chain Block lifts more easily, with a lighter hand-chain pull, because friction has been reduced where friction *was* greatest.

It gives greater service because the wear on load-sheave bearings has been greatly lessened by the Yale smooth-rolling chrome-vanadium steel ball bearings.

The Yale Block is more efficient because less muscular energy is required to lift the load.

A better block has never been made. Yale again lowers the cost of hoisting.

Yale Ball Bearing Spur-Geared Blocks with Yale Roller Bearing Trolleys insure low-cost service and the highest degree of safety.

1 Steel Roller Bearings
2 Steel Side Plates
3 Steel Equalizing Pin
4 Steel Safety Hook and Crosshead
5 Steel Suspension Plates
6 Steel Load Sheave
7 Steel Load Chain
8 Steel Detachable Shackle
9 Steel Safety Hook
10 Steel Ball Bearings

—a line of steel from hook to hook.

The Yale and Towne Mfg. Co.
Stamford, Conn., U. S. A.

YALE MADE IS YALE MARKED

YALE Hoisting and Conveying Systems

CONDITIONS IN THE RESERVOIR INTERIOR

(Continued from Page 56)

liquid in the hole, the method of direct measurement is not convenient, although it is possible. The gauge at W requires an air-filled pipe connected with it and extending down the casing to b. For all practical purposes with a gas well, the pressure at the head of the well W is the same as that the point b.

Knowing the specific gravity of the liquid and its height in the casing, the pressure which this column exerts upon b may be computed. With a combination well, account must be taken of the fact that the expanded gas decreases the weight of the column of liquid. The weight per unit volume of the combined fluid decreases as the fluid moves up the casing from b to W and the specfic gravity of the two together, reckoned as of the point midway between the top and bottom, may be taken as the average specific gravity for the entire column.

Obviously, any act which shifts either N or J will alter the value of the registered constant back pressure.

Potential Pressure

285. The potential pressure is equal to the static pressure minus the constant back pressure. In Figure 277 it is represented by the distance between the lines N and I. The potential pressure is, with all reservoirs, a differential pressure. It is always equal to the difference between the pressure within the reservoir, i.e., at the interior side of the orifice when such orifice is closed, and the pressure on the exterior side of the orifice.

This pressure is the one which determines that there shall be flow at the orifice b. (Article 18). Our previous discussion has repeatedly brought out the fact that this pressure is the one which we must invariably reckon with in computing functions of delivery from any class of reservoir.

Supposing that the supply of water at a were completely shut off, and that production at W were to continue until the end, it is obvious that the pressure gradually lowers until the point f is reached. At this time, the reservoir is in complete equilibrium. This fact conforms to the statement made in Article 248 that, if oscillation of control takes place, the pressure begins to decline and approach the X-axis of Figure 247. The head of liquid declines toward f on the line N and stops when it reaches this point. The lowering of N so as to again start up flow amounts to the setting up of a new potential reservoir. (Articles 38 and 39). Any act which alters the position of either line N or I results in a change in the value of the potential pressure.

Internal Friction Head

280. The resistance against flow which is offered by the solid matter constituting a porous medium depends upon the size of the small channels between particles of this matter, the viscosity of the fluid and the velocity of flow through these channels. (Article 93). This resistance, which extends over the path between a and b, is the internal friction head. In an actual case such a friction head may be expressed in the same units employed in stating pressures for the reason that it functions as a pressure itself.

The internal friction head is represented in Figure 277 by the distance between the lines L and I. As in previous cases, any act which alters the position of either of these two lines causes a change in the value of the friction head. The position of L is easily altered by manipulating the orifice, increasing or decreasing the velocity of flow at W. A partial closing of the orifice raises L to some position L″ and the enlargement of the orifice lowers L to a position L′. A change in the position of the line N also reflects upon the location of the line L.

Heat produced by internal friction is a conversion made at the expense of mechanical energy available at b. (Joule's Law, Article 157 et seq.)

The resistance offered by bubbles of gas in a combination reservoir is frequently far in excess of that offered by the same formation to the particular liquid alone. Internal friction head includes the Jamin effect. (Article 182). We are to study the latter, however, apart from the more general head on account of its mathematical and economical importance.

External Friction Head

287. The resistance offered toward flow at the orifice and in the flow line exterior to it constitutes the external friction head. (Articles 68, 69 and 70). Like the internal friction head, it may be expressed in units of pressure.

The external friction head is represented in Figure 277 by the distance between the lines M and L. It is important to note that, for a given reservoir, M does not move in its position without L doing likewise. When the external friction head is increased or decreased, the internal friction head is decreased or increased, respectively. The value of the external friction head may be altered either by manipulation of the orifice or by changing the value of the constant back pressure.

Total Friction Head

288. The sum of the internal and external friction heads is the total friction head. It is represented in the figure by the distance between the lines M and I. The discordant action of the two component friction heads provides a limit to the upward movement of M as the external friction head is decreased. In other words, as M moves upward, L moves downward and in the limit the two lines coincide. Further attempts to increase the velocity at W by decreasing external friction head will, in this limiting position of the lines, prove unsuccessful.

For a given set of conditions for a particular reservoir, an increase or decrease in the velocity of flow at W, resulting from manipulation of the orifice, is itself evidence of a decrease or increase respectively, in the value of the total friction head for the entire system.

For a given reservoir, any act which increases or decreases the potential pressure, thereby increasing or decreasing the velocity of flow at W, results in an increase or decrease, respectively, in the total friction head for the entire system.

Residual Pressure

289. The residual pressure is equal to the potential pressure minus the total friction head. It is represented in the figure by the distance between the lines N and M. Whereas potential pressure determines that there shall be flow at the orifice, residual pressure determines the velocity of such flow. Any act which increases or decreases the distance between the lines N and M will result in an increase or decrease, respectively, in the velocity of flow from W.

Potential velocity is related to potential pressure through the residual pressure which serves as a mathematical intermediary between the two primary functions. In this manner the residual pressure becomes a very important secondary function of fluid delivery.

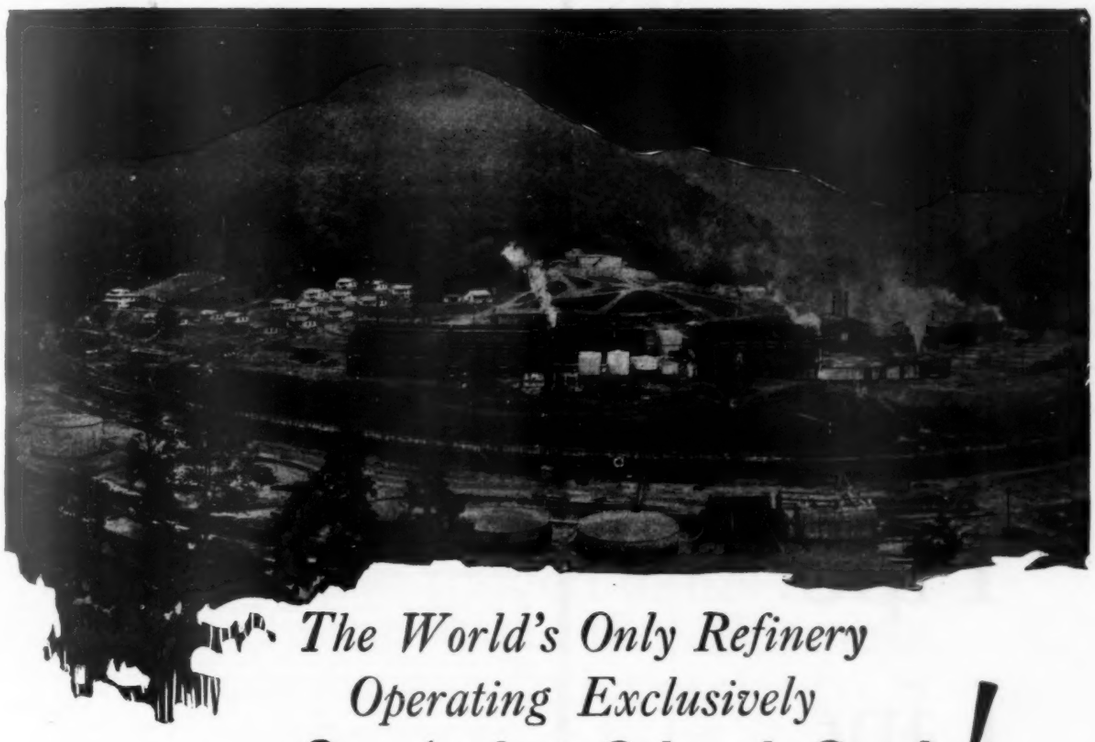
Theoretic Performance

290. If ideal performance, as we have defined it, were the only performance existing in connection with flow from reservoirs, there would be no need of making the foregoing classification of pressures. By means of such a classification, however, we may investigate that which has been designated as theoretic performance. We shall force known changes upon an ideal well of hydraulic control and observe their effects. In other words, we shall perform those acts which increase or decrease the distance between the lines N and M and note any effects upon potential pressure, the pressure-time curve, potential velocity, the velocity-time curve, etc.

All acts affecting the value of the residual pressure fall into three groups, giving rise to three cases. Any one of these cases, any two of them, or all three of them may be involved in the handling of a particular oil or gas well in actual practice. For convenience, we shall confine our discussion to the class of reservoir illustrated in Figure 277, although the same argument may be applied to any reservoir of hydraulic control.

Case 1

291. The first case is that wherein the line M shifts to M′ or M″, without



The World's Only Refinery Operating Exclusively On Amber Colored Crude!

100 PER CENT SUPER-PENNSYLVANIA · COMMANDS A PREMIUM PRICE · CABIN CREEK · OVER ALL OTHER CRUDES · THE PURE OIL COMPANY ·

Pure Oil's Cabin Creek Refinery, situated in the picturesque mountains of West Virginia, has the unique distinction of being the only Refinery in the world operating exclusively on Amber Colored Crude.

The clean, transparent, amber colored Cabin Creek Crude, an ample supply of which is assured for years to come — is unlike any other crude oil in the world. It is super-Pennsylvania and always commands a premium price over all other crudes.

The super-quality of the raw material which Cabin Creek Refinery uses insures the super-quality of its finished product.

BRIGHT STOCK (Cold Test Filtered)	300—MINERAL SEAL
47-48 KEROSENE	36-40 FUEL or GAS OIL
45-46 KEROSENE	NEUTRALS
	GASOLINE

THE PURE OIL COMPANY

General Offices: COLUMBUS, OHIO

Independent — and successful, through unvarying high quality in all its products

Refineries at:		*Branch Offices at:*	
MARCUS HOOK, PA.	MINNEAPOLIS, MINN.	CHICAGO	PITTSBURGH
WARREN, PA.	CUSHING, OKLA.	DALLAS	WARREN, PA.
HEATH, OHIO	ARDMORE, OKLA.	NEW YORK	TULSA, OKLA.
CABIN CREEK JCT., W. VA.	MUSKOGEE, OKLA.	MINNEAPOLIS	CHARLESTON, W. VA.
SMITH'S BLUFF, TEXAS		ATLANTA, GA.	PENSACOLA, FLA.

Who Builds The Best Pipe Line Pumps

PRESCOTT MENOMINEE

The Prescott Co.
Menominee, Mich.

any movement in the lines K, J, N and I. This happens whenever the orifice of a hydraulic control oil or gas well is manipulated in the course of field operations. The alteration in external friction head causes a change in the internal friction head, the total friction head and the residual pressure. Other pressures are unaffected. In brief, these conditions may be tabulated as follows:

Static pressure .....Unaltered
Constant back pressure ...Unaltered
Potential pressure .....Unaltered
Total friction head .....Altered
External friction head .....Altered
Internal friction head .....Altered
Residual pressure .....Altered

Referring to Figure 277, it may be seen that not only is there a discordant action as between TF and R, since one increases when the other decreases, but also that there is a quantitative exchange in units of pressure between the two. What one gains or loses, the other loses or gains, respectively, because the sum of the two, i.e., the potential pressure is unaltered in value.

292. An increase or decrease in external friction head acts concordantly upon the total friction head. This is evident from the fact that an act such as the partial closing of the valve on the flow line decreases the velocity of flow, and conversely. The relative quantitative alteration in the value of these two pressures is mathematically complicated by the discordant action between the external and internal friction heads.

An increase or decrease in external friction head causes a decrease or increase, respectively, in the velocity of flow from the orifice. This in turn causes a decrease or increase in the lineal velocity of the fluid throughout the interior of the reservoir and thus the internal friction head is correspondingly decreased or increased. The concordant action between the external friction head and the total friction head indicates the fact that, quantitatively, any alteration in the value of the external friction head is greater than the corresponding, oppositely directed, alteration in the internal friction head.

293. As between the internal friction head and the residual pressure, these alter concordantly. An increase or decrease in one is accompanied by an increase or decrease in the other respectively. When caused to alter, however, they do not change their values by the same number of pressure units.

We shall later demonstrate the fact that the internal friction head and the residual pressure both vary as the square of the lineal velocity of the fluid with reservoirs of either hydraulic or volumetric control. Alterations in the values of these pressures are brought about by artificial means in both controls, as in the present case, although in volumetric control, such alterations also result naturally as a consequence of the decrease in potential pressure in the elapse of time. As they vary with the square of the lineal velocity so do they vary with the square of the velocity of flow from the orifice, because the two velocities are directly proportional to each other.

We may write:

$$IF = KVe^2$$
$$\text{and } R = KVe^2$$
$$\text{so } R = K(IF)$$

Which is to say: The residual pressure in any hydraulic or volumetric control reservoir is always equal to the internal friction head, multiplied by a constant. As a consequence, whatever percentage variation is forced upon one of the pressures, artificially or naturally, the other suffers a variation by the same percentage. They do not alter their values by the same number of pressure units but by the same percentage ratio.

Hereafter, when we meet such cases in variation, we shall speak of it as a "harmonious percentage variation." The principle is not confined to pressures alone, for we shall encounter the same situation in dealing with other primary functions of delivery, frequently as between one primary function and another for the same potential reservoir.

Pressure-Time Curve

294. In this case the potential pressure is unaltered. The pressure-time curve for theoretic performance is now the same as that for ideal performance. The curve is that of the straight horizontal line, as illustrated in Figure 247. Instead of plotting ordinates in units of pressure, we may plot them in percentages of potential pressure determined at a time when we consider the oil or gas well to be producing according to what we are willing to accept as "standard conditions." The X-axis, i.e., the potential axis, must be taken as zero. Thus we obtain the well known "percentage decline curve." Obviously, in the present case, there is no decline or acceline. Standard conditions here must be based upon some function other than potential pressure.

We can, if we wish, construct a curve between residual pressure and time; the ordinates to be either in units of pressure or in percentages. It is now possible to adopt standard conditions as based upon some value of the residual pressure. It is not essential that the greatest value for this pressure be taken as the standard for comparison. Any value possible of attainment will serve equally as well in a mathematical way, although we recognize a tendency to use the greatest value. A standard based on normal conditions of production will serve very well and will present an advantage in the fact that standard conditions may be set up, or defined, for the well at any time during its life. We refer the construction of this curve to Cases 2 and 3, to follow.

Flow meters are frequently calabrated by attaching them to reservoirs of hydraulic control. Subsequent manipulation of a valve alters the residual pressure and the calabration is thus effected as between a series of values for this pressure velocity of flow, the latter being determined independently of the meter and its amount compared with that registered by the said meter. This manipulation causes instantaneous transition. (Articles 89 and 90).

Velocity-Time Curve

295. The velocity-time curve for ideal performance, as illustrated in Figure 252, will not serve for theoretic performance for this case. The alterations in residual pressure cause changes in the value of the potential velocity, as shown in Figure 295. The line A is considered as representing standard potential velocity and is therefore taken as 100 per cent, according to the ordinate on the Y-axis. Abscissas represent time elapsed, measured from the origin on the left. For the reason that the line N is not disturbed in the present case, we need only concern ourselves with the potential axis for X, the axis which corresponds to the line N. (Article 278).

The length of time during which the velocity is Ve_1 is designated as the first period of time. (Article 59). A change in the condition of the flow from the orifice, e.g., the partial closing of a valve, sets up a new potential reservoir which proceeds to produce through the second period of time at a velocity of Ve_2, establishing the position of the line B in per cent of A. A subsequent manipulation establishes, likewise, a third period of time with the velocity at VE_3, etc.

The steps from A to B and from B to C, etc., illustrate instantaneous transition. If R_1, R_2 and R_3 are the particular values of the residual pressure corresponding to velocities Ve_1, Ve_2 and Ve_3 respectively, then, by Torricelli's theorem, the following equations may be written:

$$\frac{Ve_2}{Ve_1} = \frac{\sqrt{R_2}}{\sqrt{R_1}}$$
$$\frac{Ve_2}{Ve_1} = \frac{\sqrt{R_2}}{\sqrt{R_1}}$$
$$\text{and } \frac{Ve_3}{Ve_2} = \frac{\sqrt{R_3}}{\sqrt{R_2}}$$

In general, the ratio between any two velocities is equal to the ratio between the square roots of the residual pressures. But this ratio equality only holds when velocity is expressed in terms of potential velocity.

296. We said in Article 276 that pressure-velocity relations are impossible of expression as a derived primary function law for hydraulic control and here we are applying Torricelli's theorem to

"Be Square Products"

BARNSDALL

Engaged in Every Branch of the Petroleum Industry

We have moved to 624 South Michigan Ave., the Business Home of the Independent Oil Companies soon to be known as the

PETROLEUM BUILDING

Give us a call when in the market for Superior Quality Lubricating Oils

Pioneer Manufacturers of Western Cylinder Stocks

Barnsdall Refining Company

Subsidiary Barnsdall Corporation

624 South Michigan Ave., Chicago, U. S. A.

New York Pittsburgh St. Louis Kansas City St. Paul Los Angeles Tulsa

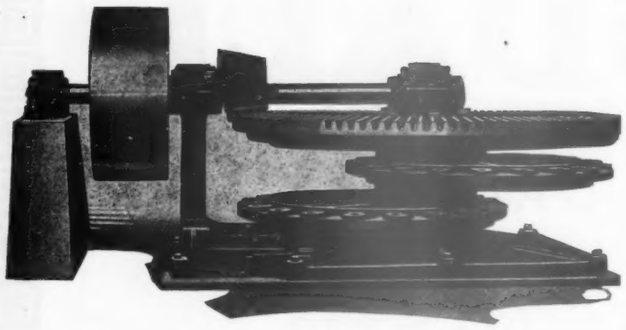
Foreign Offices:

Paris Buenos Aires

Antwerp

Cable Address: Barnsdall, Chicago

PATTIN POWER



Eccentric
20″ Stroke

Weight
6250 Pounds

The power illustrated above is our latest, and the most powerful geared power on the market.

A very heavy underpull power with two eccentrics, each having a 20″ stroke. The pinion shaft is supported on three bearings, a very important point, as tight belts soon pull ordinary powers out of line, resulting in broken gears. This power is geared eight to one, the pinion is steel, and we have never had one to fail on the heaviest loads.

We recommend this power in place of the usual band wheel powers, and their expensive installation. Can also furnish this power with one eccentric.

The Pattin Brothers Co.
Marietta, Ohio

Tulsa, Okla.
Wichita Falls, Texas
Branches:

Agencies:
Blaisdell Mach. Co.
Bradford, Pa.

residual pressures and potential veolcities. How do we reconcile this apparent contradiction? In the first place, residual pressure is not a primary function of delivery, but merely a secondary function. In the second, we have artificially caused a change in a hydraulic control reservoir which nature itself would bring about in the course of time in a volumetric control reservoir. In other words, we have erratically imposed the laws of volumetric control upon a reservoir of hydraulic control—erratic in the sense that it is done artificially and in absolute independence of time, as a function of delivery.

Now we see that the two controls have mathematics in common. As stated in Article 90, instantaneous transition for both hydraulic and volumetric control takes place according to the laws of delivery for the latter control. The physical significance of the identical behavior with these two classes of reservoirs is important. Under no other circumstances are the primary relations between the delivery functions of the two controls similar.

Application of Case 1

297. Suppose that we have a hydraulic control gas well and we wish to study the relations between residual pressure and velocity of flow from the orifice. We are to manipulate a valve at the head of the well in order to obtain different rates of production.

Place a pressure gauge in the line on the up-stream side of the valve. It will register the total friction head for the entire reservoir system at any position of the valve, plus the registered constant back pressure, the latter specified as not alterable in the present case. Take the two following readings on the gauge:

(a) With the valve full open. This is the lowest possible value to register with the given reservoir in its present condition and with its present equipment. The external friction head is at its lowest value; the internal friction head is at its highest; and the total friction head is at its lowest value. As proof of the latter statement, we have the greatest possible velocity with the valve full open. We may say that the total friction head is of "potential zero" value. Since the potential pressure remains unchanged, the residual pressure now has its highest value. We shall take this value as 100 per cent and consider the well as operating under "standard conditions" when the valve is thus full open.

(b) With the valve entirely closed, This is, in reality, the registered static pressure. It here possesses further significance. It is the highest value possible to register on the gauge. External friction head is now its greatest; the internal friction head is at its "potential zero;" and the total friction head is at its greatest. It is at its 100 per cent amount. As a result, the residual pressure is now at its "potential zero."

All variations in the position of the valve must provide gauge readings which lie between (a) and (b). These readings indicate the relative amounts of total friction applied to production and also the relative amounts of residual pressure at any time, as compared with our adopted standard condition.

298. Designate the entire range of pressure readings shown by (a) and (b) with the letter D. Now give the valve any desired position between the two possible extremes and observe the reading on the gauge. From this, subtract the reading for (a) to obtain the added total friction. Designate this by the letter F.

Divide F by D and multiply by 100 per cent. This is the relative value of the total friction head. Since there is a quantitative exchange between total friction head and residual pressure, subtract this per cent from 100 per cent and obtain the relative value of the latter pressure.

Considering the velocity under standard conditions as 100 per cent, we may calculate the velocity at any desired setting of the valve by the formula given in Article 295.

Example in Application

299. As an example, let us consider the following: The gauge registers 20 pounds with the valve full open and the velocity of flow is determined by measurement to be 500,000 cubic feet of gas per 24 hours. When the valve is entirely closed, the registered static pressure is 260 pounds. What is the velocity of flow when the valve is set so that the gauge shows 100 pounds pressure?

Calculate the range of pressure possible by manipulation:

260 Valve entirely closed
20 Valve full open

240 =D, range of pressure readings
Calculate the added total friction:

100 Valve partially open
20 Valve full open

80 =F, the added total friction
Then:

$80/240 \times 100\% = 33\frac{1}{3}\%$. The relative position of the total friction head.

$100\% - 33\frac{1}{3}\% = 66\frac{2}{3}\%$. The relative position of the residual pressure.

Substituting into the formula of Article 295, taking Ve_1 and R_1 both as 100 per cent:

$$\frac{Ve}{100\%} = \frac{\sqrt{66\frac{2}{3}\%}}{\sqrt{100\%}}$$

therefore

$$Ve = 81.65\%$$

and

$81.65\% \times 500{,}000 = 408{,}250$ cubic feet per 24 hours. Which is the answer to the question above.

300. It will be observed that the values of the various pressures need not be known in pressure units, other than the registered static pressure. This is to say, the actual value of the internal, external and total friction heads and, likewise, the actual value of the residual pressure, were not determined and did not need to be determined at any stage in the calculation. Furthermore, whatever value the constant back pressure had during the test, such value dropped out by subtraction in the first two steps of the calculation.

This problem illustrates the mathematical foundation for the testing of flow meters which are to operate either upon reservoirs of hydraulic or volumetric control.

G. W. BARBER REPORTED DEAD

HOUSTON, Tex., May 4.—The State Department at Washington is seeking information concerning George W. Barber, an American citizen, whose death on March 25, at Villa de Arriaga, Mexico, is reported by the United States Consul at San Luis Potosi.

Mr. Barber was well known in the southwest fields, where he had been located for many years as a pipe line worker. He was about 68 years old. Mexico held a peculiar fascination for him and he made many trips into that country. He was last employed by W. P. Gage, president of the Pure Oil Pipe Line Co., an old friend, who assigned him to light work about pumping stations. He was born at Salamanca, N. Y., and at one time had been a passenger conductor on the Buffalo, Pittsburgh & Rochester Railroad. He had also been connected with the Southern Pacific Lines in California. Friends say he had one brother, Rash Barber, located at Lorain, Ohio, and a niece, Miss Anna Barber, agent for the Logan Gas Co. at Norwalk, Ohio. Mr. Barber served in the Boer War in the British Army and was decorated for gallantry. He was also in the Spanish-American War as a member of a Texas regiment. When the United States entered the World War he made strenuous efforts to get into the service in any capacity, but was barred on account of age.

RUMANIAN PRODUCTION

February petroleum production in Rumania showed a decline to 168,000 tons, as against 172,000 in December and 170,473 in January. The total petroleum production for 1924 of 1,853,133 tons was equal to the best pre-war figures. Petroleum exports for December reached 54,000 tons, as compared with 46,000 tons for October and 46,000 tons for November.

Save gasoline with Johns-Manville Vapor-Tight Insulated Tank Tops

Patented, other patents pending

FIELDS and refineries which would not tolerate the wastefulness of an uninsulated steam line nevertheless often lose thousands of dollars yearly by evaporation from crude and gasoline storage. Yet this loss can be minimized.

Savings up to $14,000 a year per tank have been made by insulating "fifty-fives" with Johns-Manville Vapor-Tight Insulated Tank Tops, which cut breathing losses by thoroughly insulating the vapor space above the oil and which make the roof and eave gas tight.

Over 30,000,000 barrels storage capacity has been equipped. Write

JOHNS-MANVILLE Inc., 292 Madison Ave., at 41st St., New York

Branches in 62 Large Cities

For Canada: CANADIAN JOHNS-MANVILLE, Ltd., Toronto

Through Asbestos and its allied products
INSULATION
BRAKE LININGS
ROOFINGS
PACKINGS
CEMENTS
FIRE PREVENTION PRODUCTS

JOHNS-MANVILLE

Oil Industry Department

TEXACO

REG. U.S. PAT. OFF.

TEXACO

Petroleum Products

HIGH GRADE UNIFORM QUALITY

Gasoline	Greases
Kerosene	Cup Greases
Fuel Oils	Gear Greases
Bunker Oils	Gear Lubricants
Diesel Fuels	Axle Greases
Signal Oils	Wire Rope Lubricants
Miners Oil	Pale Oils
Gas Oil	Red Oils
Distillates	Black Oils
Spindle Oils	Floor Oils
Motor Oils	Waxes
Engine Oils	Asphalts
Dynamo Oils	Road Oils
Machine Oils	Asphalt Cement
Cylinder Oils	Pipe Coating
Cylinder Stocks	Roofing
Car Oils	Roofing Paper
	Roofing Cement

THE TEXAS COMPANY

NEW YORK 17 Battery Place | CHICAGO McCormick Bldg. | HOUSTON The Texas Co. Bldg.

Offices in Principal Cities

Export Dept.: 17 Battery Place, New York City

INDUSTRY INVITED TO RAISE FUNDS FOR PUBLIC RELATIONS COMMITTEE

A general appeal has been issued to the petroleum industry, through W. N. Davis, chairman of the Public Relations Committee appointed by the directors of the American Petroleum Institute, for contributions to the fund authorized for the administration of an organized educational program. Mr. Davis believes that full opportunity should be given to the entire industry to get behind the movement so that the committee will be able to start functioning at the earliest possible date. As soon as the money is subscribed the committee will employ the necessary staff, organize the work and begin functioning. Mr. Davis and other members of the committee hope for an early response to the general solicitation for funds so that this work, which Mr. Davis states, was never so urgently needed, can get under way.

In a letter just addressed to the members of the public relations committee representing the various trade associations, Mr. Davis says in part:

'I believe the time has come for various associations represented on this committee to approach their membership in an effort to secure from their members some kind of contribution in support of this movement.

"It is not my desire to attempt to outline any program nor fix any schedul- of contributions, as you are much better acquainted with and therefore qualified to classify your own membership.

"As you are fully aware the success of this whole movement will depend upon the extent of the moral and sympathetic support of every individual in the oil industry, and I hope that you will be able not only to raise a considerable proportion of the budget but to secure a very long list of contributions."

The members of the Public Relations Committee representing various national associations are: H. H. Smith, secretary, Mid-Continent Oil & Gas Association; D. E. Buchanan, president, Association of Natural Gasoline Manufacturers; H. G. James, secretary American Oil Men's Association; O. P. Keeney, president National Petroleum Association; W. H. Gray, president Association of Independent Oil Producers; F. A. Pielsticker, president Western Petroleum Refiners Association; A. C. McLaughlin, president, Chamber of Mines and Oil, California, and L. V. Nicholas, president, National Petroleum Marketers' Association. Other members of the committee are W. N. Davis, chairman; J. Howard Pew, vice chairman, president Sun Oil Co.; Paul Shoup, president Pacific Oil Co.; C. C. Herndon, Skelly Oil Co.; Edward Prizer, chairman Vacuum Oil Co.; J. A. Moffett, Jr., vice president Standard Oil Co. of New Jersey, and E. C. Lufkin, chairman The Texas Co.

Three Years' Fund

Under the resolution appointing the public relations committee, the committee is authorized to raise $100,000 annually for three years for the support and administration of an educational program. This money is being raised by contributions covering the three-year period, ended with December 31, 1927. It was the desire of those adopting the public relations plan that the widest possible distribution be obtained in the matter of contributions to the fund so that the movement would retain the form which it has had since inception of having the backing of the entire industry rather than any one or of several groups or divisions. For this reason the committee is appealing to small as well as to large units. In fact, maximum contributions have purposely been kept small so that the fund will represent when fully subscribed a great many units.

In view of the species of attack often leveled at the industry this matter is considered of particular importance. It can be readily seen that a public relations program supported largely by the Standard Oil companies or, say, exclusively by large oil companies would be subject to attack. When the fund is raised it will probably show some hundred or more companies as subscribers and will be thoroughly representative of the entire industry.

The appeal to national trade associations for the support of the movement by their members also recalls that the movement was started by these associations. The Western Refiners' Association, Mid-Continent Oil & Association and Association of Natural Gasoline Manufacturers, among others, became active and insistent in interesting the American Petroleum Institute in taking up the matter. At the request of these associations, which were joined by other national associations, including the American Oil Men's Association, National Petroleum Marketers' Association, National Associational of Independent Oil Producers, National Petroleum Association and Chamber of Mines and Oil, a general conference was held, meeting with the directors of the American Petroleum Institute. The formation of the present public relations committee of the industry was an outgrowth of this and subsequent conferences.

A sub-committee comprising W. N. Davis, chairman; J. Howard Pew, vice chairman; Edward Prizer, H. H. Smith, C. C. Herndon and R. L. Welch, has done much of the preliminary work. As the raising of the fund is the first requisite, the actual functioning of the public relations committee as an organization is awaiting the completion of this step. Meantime the committee has been considering details as to personnel, etc., and will probably be able to go ahead with the organization as soon as the money has been subscribed.

The general plan of operation of the organization provides for the preparation of material for the press, issuance of pamphlets and probably preparation of some good-will advertising. Material will also be made available for speakers, and public talks and use of the radio will be encouraged.

The public relations organization will do little direct distributing of material and undoubtedly will do no direct advertising as the size of the fund to be raised precludes any such expense. The plan under which it will operate is largely one of providing the material for the use of the units of the industry as they see fit. It is therefore important to the success of the plan that the widest interest be shown in the work of the organization.

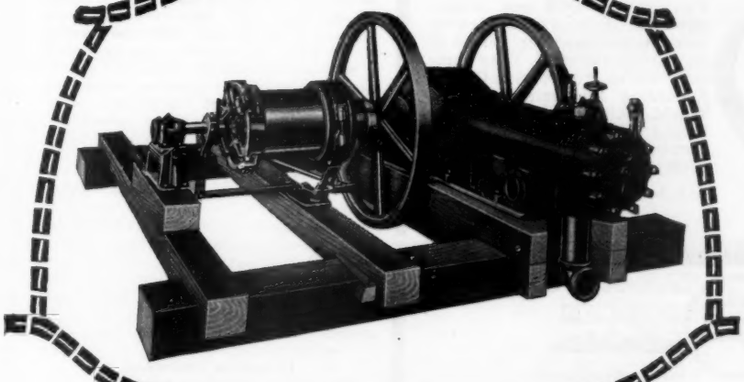
Conference on Accounting

A meeting of regional chairmen of the committee on uniform accounting of the American Petroleum Institute, of which M. W. Mattison is chairman, was held in New York on April 13 and 14. The regional chairman in attendance were Rodney S. Durkee General Petroleum Corp., Los Angeles; C. H. Jay, Pure Oil Co., Columbus; L. S. Sinclair, Magnolia Petroleum Co., Dallas; George F. Winters, Phillips Petroleum Co., Bartlesville and Harold Butt, Tide Water Oil Co., New York.

The chairmen considered forms of balance sheets and revenue and expense accounts prepared by Messrs. Durkee and Mattison who have had conferences with the various regional committees in various parts of the country.

The conference in New York devised a form of questionnaire which will go out to auditors and controllers of oil companies with an idea of getting a full view of the industry on all questions involved. Each major operation in the oil business is treated entirely separately in the forms which have been prepared for consideration of the industry. Separate revenue and expense accounts are designed for production, for refining, for transportation and for sales, thus making the method available to a company engaging in any one branch of the industry. The accounts can be used in consolidated form by integrated companies which wouldd treat them as departments in their handling of the accounting.

FRANKLIN
VALVELESS ENGINES



Although there are many drilling engines on the market many of them ignore one of the fundamentals of good engine construction—CROSSHEAD.

The Franklin is of the enclosed type with all parts easily accessible. It is a horizontal, single cylinder, two cycle, three port VALVELESS engine fitted with a CROSSHEAD.

The use of a CROSSHEAD relieves the piston of all side thrust, due to the angularity of the connecting rod. It permits the use of the best known system of lubrication, and adds greatly to the life of the engine. Ask for complete information, stating why the crosshead construction is superior.

You will like the Franklin Drilling Engine. It has already proven itself to the satisfaction of all its users.

Franklin Valveless Engine Co.
Franklin & Penna.

DISTRIBUTORS

Atlas Supply Company
Muskogee, Okla., and Branches

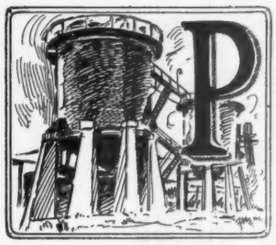
International Supply Co.
Tulsa, Okla., and Branches

New Martinsville Supply Co.
New Martinsville, W. Va.

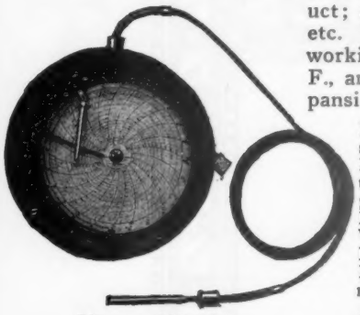
Atha Drilling Company
Zanesville, O.

Washington Engine & Pump Co., Washington, Penna.

You see them everywhere



ARTICULARLY for process temperatures around 200° you will see Bristol's Recording Thermometers Class II on duty. They check up temperatures (between 200° and 250° F.) during the drying out of barrels for greases and compounds; also during the treatment of various oil fractions to remove compounds that impart objectionable odors or tend to discolor product; also during agitation, etc., etc. These thermometers have a working range from 90° to 500° F., and are operated by the expansion of the vapor of a liquid.



Vapor filled

First in the field and always standard, Bristol's Recording Instruments meet every need in temperature control. They comprise the most extensive line of Recording Instruments in the World, including Pressure, Liquid Level, Temperature, Electricity, Motion, Speed, Humidity, etc.

Ask for Catalogs.

The Bristol Company *Waterbury, Connecticut*

FOR 36 YEARS — Ask Any Technical Engineer — MAKERS OF

BRISTOL'S RECORDING INSTRUMENTS

You could search the world over and never find a better lantern for the oil field—

DELTA

NO. 10 HAND LANTERN

It's approved by the keenest buying brains in the oil industry.

You buy Economy, Safety and Service when you invest in a Delta.

Uses two ordinary dry cell batteries which last for months.

$2.75 COMPLETE Less Batteries

In Canada $3.70

At your supply house, or sent direct for $2.75, less batteries. Write for dealer discounts on Delta Flashlights and Batteries.

Delta Electric Company

110 Delta Block, Marion, Ind.

Standard Makers of Electric Lanterns, Auto Spotlights, Auto Ash Receivers, Motorcycle Spotlights, Bicycle Spotlights, Electric Bicycle Lamps, Radio Headphones, Flashlights and Flashlight Batteries

New York City Export Dept. 30 Water St. | Chattanooga, Tenn. Faucette-Huston Co. | San Francisco Sanford Bros. 311 Minna St.

RUMANIAN GOVERNMENT EXPLAINS LAW ON PETROLEUM CONCESSIONS

WASHINGTON, D. C., May 2.—The Rumanian Legation announces a settlement has been reached with the American oil interests in the dispute growing out of the new Rumanian mining law.

Formal statement is expected by Legation officials on the arrival in the United States from Rumania of the oil company official who negotiated the agreement, which is subject to ratification by the board of directors.

The law covers oil exploration operations in Rumania and has been held by American oil interests operating there and by the State Department to contain clauses of a discriminatory character which hampered work on legitimately acquired oil holdings.

Rumania has been inclined to meet complaints through making making exceptions under the executive authority conferred on the Government by the terms of the act. While this practice may be satisfactory to oil companies involved in any particular case, the American Minister at Bucharest, with the support of the State Department, has held that it was not satisfactory from a Governmental point of view and has urged that the foreign office seek amendment to the law, so that the disputed provisions would be eliminated entirely and American oil operators in Rumania not be kept under constant anxiety lest the executive interpretation be changed without notice.

George Anagnostache, chancellor of the Rumanian Royal Consulate, has forwarded to The Oil and Gas Journal a memorandum by Vintila Bratiano, the Rumanian Minister of Finances, concerning the mining law of Rumania, "which expresses the opinion of the Rumanian Government," and in part is as follows:

Rumanian Statement

The mining system in force up to now in Rumania was characterized by a very great diversity. More than 15 special laws, decrees and statutes were in force in different parts of the territory and examples could be found of the application of all systems admitted in regard to mining property: grant, accession, domaniality, nationalization, etc.

It is useless to insist upon the technical and juridical disadvantages of such a situation, and on the necessity of proceeding to the unification of a legal mining system. This was effected by Article 19 of the new constitution, which attributes to the State the ownership of sub-soil treasures. The Legislature of 1923 therefore adopted the system of nationalizing the mines.

The State formally reserved to itself the entire ownership of the sub-soil. The Rumanian State, while having the right to adopt the mining system which it thought most suitable, was also bound to respect the rights acquired under the existing legislation and to regulate the relations between the State, the owner of the sub-soil, and the owners of the surface. This is definitely stated in paragraphs 2 and 3 of Article 19, which runs thus: "A special law will settle the general rules and conditions for exploiting mineral deposits, fix the royalty due to the owners of the surface and state at the same time the conditions and the extent to which such owners will take part in exploiting these resources." Vested rights, it is stated in the text, will be taken into account in so far as they relate to the exploitation of the subsoil and according to the distinctions which will be made in the special law.

An unjustified campaign has been conducted abroad against the mining law. Certain commentators have tried to represent it as a law which injures vested interests and is prejudicial to the interests of capitalists who have invested money in Rumanian manufactures. The law having laid down, according to the Constitution, the principle of State ownership of the sub-soil, and having organized the putting into force of this principle, it has been concluded, probably on insufficient information, that the working of the mines has passed into the hands of the State, to the great detriment of actual owners and workers. Nothing is farther from the truth.

The problem appears under two different aspects and raises two distinct questions:

First, The Judicial Ownership of the Subsoil: This belongs to the State subject of course, to vested interests; and economical working. It is to be remembered that the fact of proclaiming State ownership of the sub-soil in no way implies the working of the State itself. The exploitation may take place in different ways.

Methods of Exploitation

There are three possible methods of exploiting State property: Direct exploitation, concession, combined exploitation, a mixed system of cooperation between the State and private initiative in the shape of commercial companies, in which the State would have the rights conferred upon it as a shareholder, and its part as representing the general interests of the country.

It is useless to dwell on direct exploitation. The rigid principles of State accounts, the irresponsibility of officials, the slowness and the routine of the offices are not in keeping with the suppleness, the initiative, the responsibility and the new spirit which a modern economical undertaking requires.

It does not pertain to recapitulate the complaints levelled against concession. Given the uncertainty of present economical and monetary relations, it is not difficult to define from the outset the conditions of its working. This is particularly true as regards mineral seams—the extraction of which alone shows the value.

It being necessary to keep open the possibility of constantly modifying these conditions, one of the two following positions will most likely be arrived at: Either a continual interference of the State, which will impede the concessionaire and the service and will provoke a state of things which will have all the disadvantage of the grant: Or, a loyal cooperation between the State and the concessionaire will nevertheless be realized.

Thus we come to the third system, that of cooperation between the State on the one hand and private initiative on the other hand, in the shape of a society having a commercial character, where the State would have the rights which its social share and its character of representative of the general interests of the country confer on it.

Once the principle of cooperation has been imposed on the State, it will be easy to understand the reasons which militate in favor of such cooperation taking place within a company having a national character, that is, which would have a Rumanian majority supplied by the State and by Rumanian capital at the general meeting and on the board of direction.

The present needs exceed the immediate resources of Rumania and the complexity of the economical and technical problems which all the young countries which have been transformed by the Great War, will have to solve, give to the experience and the skill of more advanced countries a value which nobody could deny.

State Cooperation

Under such conditions, the cooperation between home capital and foreign capital on the one hand and the State on the other hand becomes both necessary and desirable. Rumanian capital and foreign capital will frequently be found to have an equal share in the organizations to be created for the exploitation of State property; it will be the participation of the State that will give them a national character and a national preponderance.

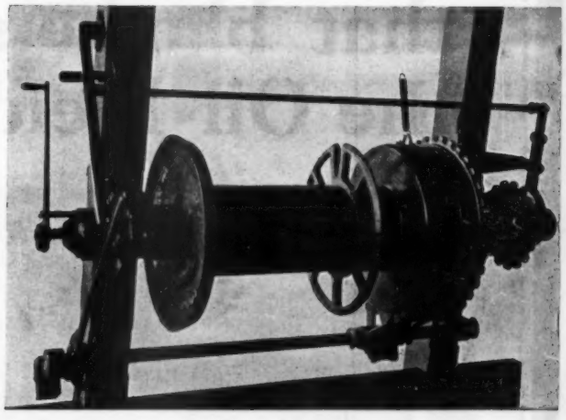
In view of the narrow bond that exists between certain economical organizations and the policy of the State, and in view of the fact that the undertakings like transports, mining enterprises or the

(Continued on Page 147)

TWO EXPERIENCED PRODUCTION MEN

(with one of the larger producing companies) invented this new

Lufkin Pumping Unit and Hoist



Specially Designed for Oklahoma

Patent Pending

—one reason why it's so practical. If you want to know about Pumping Service and Pumping Economy

Send for details and prices

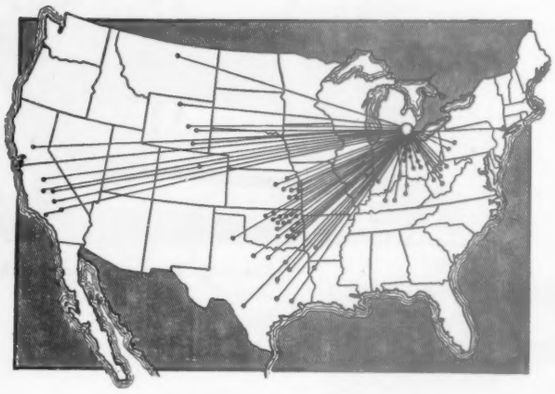
LUFKIN FOUNDRY & MACHINE CO.

NEW YORK CITY
3009 Woolworth Bldg.
HOUSTON
806 Carter Bldg.

Lufkin, Texas

LOS ANGELES
506 Com. Exch. Bldg.
TULSA
317 Roberts Bldg.

SERVICE that blankets the Oil-Field



Each Dot represents a National Supply Co. Branch

When service is needed which is seldom on McCord force feed lubricators, there's a National Supply Company branch nearby carrying a stock of parts.

Delays to your drilling or pumping operations mean a loss of dollars per minute. When you install McCord force feed lubricators you avoid unnecessary delays. Parts delivered promptly from stock when they are required is a service rendered by the National Supply Company on McCord force feed lubricators.

Prompt service on parts is just one reason why more McCord force feed lubricators are used in the oil fields than all other makes combined.

Order McCord force feed lubricators from your nearest National Supply branch and insure more continuous operation of drilling and pumping units.

Distributed in the oil fields by

The National Supply Co.

ALL BRANCHES

McCord

force feed

Lubricators

Standard of the Oil fields

McCord Radiator & Mfg. Co., Detroit

LUBRICATOR DIVISION

EASTERN FIELDS

(Continued from Page 94)

County, the Hope Natural Gas Co. completed a Big Injun sand gasser on the R. D. McIntyre farm. In Grant district, Harrison County, the Lone Star Oil Co. secured a fair gasser when it drilled its test on the Crookson farm through the Speechly sand. In Union district, the Reserve Gas Co. is drilling down to the lower sands an old Big Injun sand gasser on the I. L. Post farm.

Gassers In Kanawha County

In Washington district, Kanawha County, the South Penn Oil Co. has completed in the Berea grit a second test on the Cassingham-Skinner farm good for 500,000 feet. The same company's No. 4 on the Black Band Fuel Co.'s tract is a light gasser in the big lime formation. In Louden district, the Owens Bottle & Machine Co. has a light gasser in the same formation at No. 5 on the R. G. Quarrier farm. In Cabin Creek district, the United Fuel Co. has a gasser in the Weir sand good for 350,000 feet on the Ella B. Thompson farm. Kanawha county has considerable test work under way. In Cabin Creek district, the Mildred Gas Co. has started to drill tests on the R. L. Dickinson, W. H. O'Dell and Jabe Huddleston heirs' farms. James and Charles Warfield are drilling on the E. Workman farm. Mickey & Long have started to drill on the W. R. Noel farm. Davis & Mullins are drilling on the Huddleston-Garnet farm. The Ohio Fuel Co. is drilling a second test on the William Clatworthy farm.

On Triplett Creek, in Spencer district, Roane County, the Spencer Oil & Gas Co. completed its initial test well on the W. E. Henderson farm and has a small gas well in the Injun sand. On the same creek, same district and county, the Carter Oil Co. has a rig completed for its first test well on the L. S. Norford farm.

On the waters of Lether Fork, in Murphy district, Ritchie County, the Hope Refining & Construction Co. has completed its second test well on the W. V. Gill farm and has a slight showing of oil in the Berea sand. In Grant district, Ritchie County, the Aetna Oil & Gas Co. completed No. 11 well on the Ross estate and it is a good gasser in the Squaw sand. This well is making about 3 bbls. per day from the Maxon sand .

Drilling Deeper

On the West Fork of the Kanawha River, in Spring Creek district, Wirt County, the Federal Oil & Gas Co. is drilling deeper its third test well on the S. C. Tuck farm. This well has been a small producer from the salt sand formation. In Collins Settlement district, Lewis County, the West Fork Oil & Gas Co. has completed its second test well on the E. R. Raymond farm and has a gasser producing 7,000,000 feet per day from the Gantz sand, struck at a depth of 2,350 feet. In the same district and county, the West Fork Oil & Gas Co. has completed its initial test well on the H. C. Ramsey farm in the fifth sand and found that formation dry.

In the same district and county, T. H. Cain & Co. have completed their initial test well on the Mary Daugherty farm to the Gantz sand at a depth of 2,662 feet and have a light gas well. In the same district and county, T. M. Caine & Co. have completed an initial test well on the T. R. Snyder farm in the fifth sand and that formation was found dry. In the same district and county, Roy R. Horner has completed his first test well on the Harry V. Horner farm, 2,733 feet into the fifth sand and has a dry hole. In Collins Settlement district, same county, C. W. McCall Co. has completed its initial test well on the William Watson farm and has a light gasser in the Gantz sand. Well was completed at a total depth of 2,733 feet. In the same district and county, the same company has completed the rig for a second test well on this farm, and the Mud Lick Oil & Gas Co. has a rig building for an initial test well on the George Arnold farm. On the waters of Wolfe-Penn Run, in Ten-Mile district, Harrison County, the Delva Tex Oil & Gas Co. has completed its second test well on the Nora B. Lanham farm and has a good gas well in the fourth sand. This well was completed at a depth of 2,803 feet.

On Gillespie Run, Grant district, Ritchie County, the Hope Construction & Refining Co. gave its old No. 3 on the Neil Bradley farm a shot in the Big Injun sand and it produced 105 bbls. the ensuing 48 hours. When first completed the well started at better than 100 bbls. a day but had declined to 7 bbls. a day when it was decided to shoot it. On Knob Fork, Center district, Wetzel County, the Hope Construction & Refining Co. has completed No. 3 on the Matthew Carney farm. It is in old territory and is a natural producer good for 40 bbls. a day. This is much better than the average in this district.

In West Union district, Doddridge County, Roy Shinn has completed and shot in the Big Injun sand a test on the Ruben Smith farm, showing for a 2 bbl. pumper. In Sheridan district, Calhoun County, M. F. Crowley has completed a test on the M. F. Crowley 71 acres. It has a good gas pressure and showing for 3 or 4 bbls. a day. The location is 2,500 feet west of the Hope Construction & Refining Co.'s test on the Bert Haverty farm.

Light Pumpers in Doddridge

In Central district, Doddridge County, the Hope Construction & Refining Co. has a light pumper in the Big Injun sand at a test on the H. B. Williams farm. In West Union district, the Murphy Oil Co.'s No. 4 on the Wilmer Rollins farm is good for 15 bbls. a day in the Big Injun sand. In Collins Settlement district, Lewis County, C. F. Moran's test on the M. B. Snider farm is a duster in all sands. In the same district, the McCall Oil & Gas Co. is building the rig for a second test on the W. M. Watson farm.

In Union district, Lincoln County, the Superior Gas Co. has a gasser in the Big Injun sand at a test on the Viola Adkins farm. In Duval district, Lincoln County, the West Side Gas Co. has a gasser in the same formation at a test on the M. D. Goode farm.

On Bull Creek, Walker district, Wood County, Dollman & Kingsbury have started to drill on the J. W. West farm. In the same district, R. W. Richards is moving a drilling machine to a location on the S. Hackett farm. On Fish Creek, Liberty district, Marshall County, the Hope Natural Gas Co. has the rig completed for a test on the Ella Kemp farm. On Laurel Run, the Manufacturers Light & Heat Co. has a rig up on the George Chambers farm. On the same stream, the Hope Natural Gas Co. has a rig completed on the L. W. Richmond farm. In Mannington district, Marion County, the Hope Construction & Refining Co. is drilling down to the lower sands its No. 2 on the W. Hakins farm.

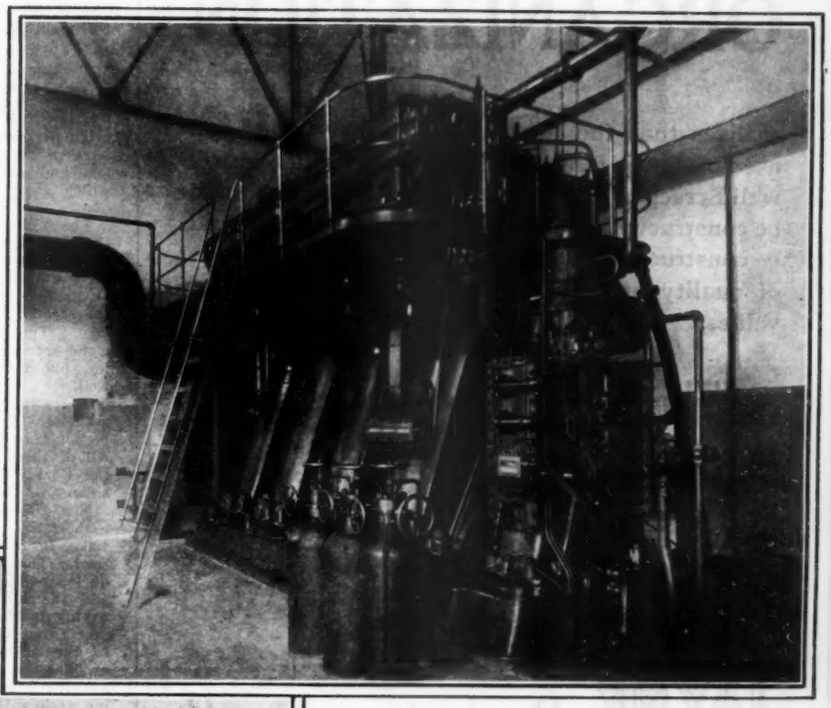
Southwest Pennsylvania

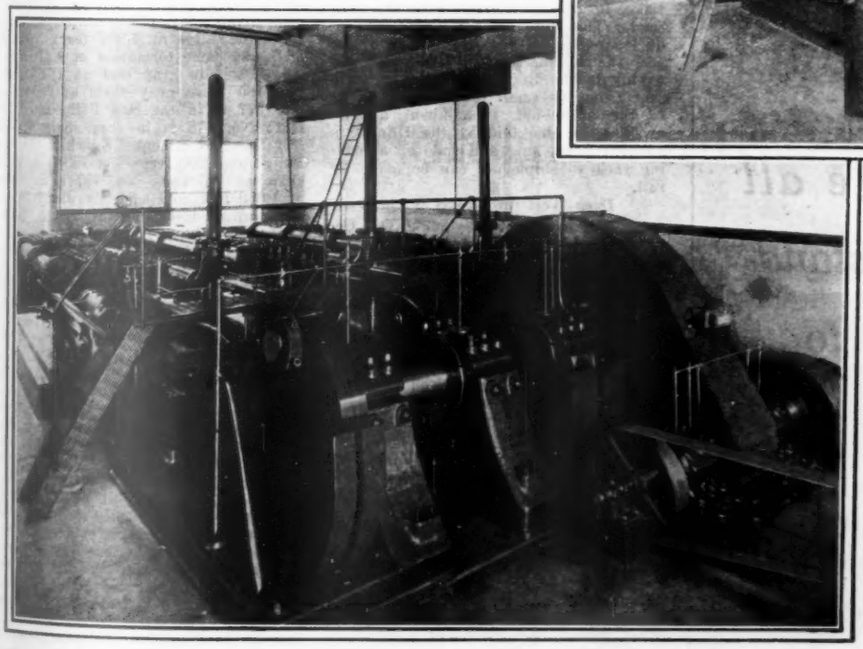
Southwest Pennsylvania completed a number of wells and drilled in one that is showing for much better than the average. It is the Martin Oil & Gas Co.'s second test on the Jarrett Fox farm, located on Raccoon Run, Perry Township, Greene County. The first hour after the well was drilled into the Big Injun pay the hole filled up 1,000 feet with fluid. Drilling was suspended to erect tankage and will be drilled deeper. In Perry Township, Greene County, the Peoples Natural Gas Co. has a gasser in the Bayard sand at a test on the S. H. and Clara Lemley farm. In the same township, the same company's test on the Harry Lemley farm is a gasser in the same formation. In the same locality, the Black Run Gas Co. is due in the Big Injun sand on the McClelland Wright farm. In Whitely Township, the Peoples Natural Gas Co. is due in the same formation on the H. J. Zimmerman farm.

In Springhill Township, Greene County, the Phillips Drilling Co. has drilled a total depth of 3,450 feet in a test on the Patrick Taylor farm. It is dry in all sands. One mile south of Sycamore, Center district, the Carnegie Natural Gas Co. has a light gasser in the 50-foot sand at a test on the S. McGlumphy farm. In South Strabane Township, Washington County, Benedum

FULTON DIESEL

In Pipe Line Service





Pump driven by FULTON-DIESEL

550 B. H. P. Fulton-Diesel

On the long stretches of pipe lines that connect the producing wells of the west and south with the refineries of the north and east will be found many FULTON-DIESEL installations.

Pipe Line Service—demanding that no link in the long pumping chain fail—is a service to which the FULTON-DIESEL is particularly well adapted. Its recommendation is based upon careful selection of material of manufacture, conservative rating, (low brake mean effective pressure) and heavy duty design and construction. The operating features of the FULTON-DIESEL, such as the centralized starting and stopping control, the accessibility of bearings, etc., contributes to its being a unit ideal for pumping duty.

FULTON-DIESEL publications describe the various type units in detail and it will be our pleasure to send you copies.

FULTON IRON WORKS COMPANY, ST. LOUIS, U. S. A.

Successful engine builders for over seventy years

Branch Offices

New York—82 Wall St. Dallas Texas—Praetorian Building. Havana, Cuba—401-402-403—Banco Nacional

THE LAYNE

ORGANIZATION

realizes that the Screen and Packer buyer and user of today is an expert judge of what an oil well Screen or Packer should be, of how it should be constructed, and the class of material it should be constructed of; that he is, in fact, a real student of quality and an exceptionally close judge of values.

This Is the Class of Trade

THE LAYNE Screens and Packers are Built to Serve, for

THE LAYNE *Products are all built up to the highest standards, and not down to meet low prices*

There is a Layne product for every use below the casing

WE WANT YOU TO HAVE OUR LITERATURE

24 Hour Service----7 Days in the Week

Layne & Bowler Company
Houston, Texas

& Trees have completed and shot a test on the J. S. Gushert farm. It is a very light pumper in the fourth sand at a total depth of 3,073 feet. In Robinson Township, Allegheny County, M. Clever has completed in the fifth sand a second test on his own farm. It is a very light pumper.

In Springhill Township, Greene County, the Dunmar Oil & Gas Co.'s test on the James Murphy farm is dry in all sands.

ROCKY MOUNTAIN AREA

(Continued from Page 48)

trains of gasoline for export trade, via Baton Rouge, making a total of 7,200,000 gallons of gasoline for the month.

Thomas Kinney, for 20 years an official of the Illinois Pipe Line Co. and for eight years superintendent of the Rocky Mountain division of that firm, has tendered his resignation and will retire from active work in the oil fields for the time being. Mr. Kinney came originally from Oil City, Pa. He suffered a severe sickness a few months ago and an operation, the effects of which have compelled him to take a rest.

The California Co., a subsidiary of the Standard of California, is starting another test in the Byron Field in Park County, Wyoming. The hole will be drilled with a rotary outfit and is the second the firm has started in this field. The first struck a pocket that made several flows over the crown pulley, but failed to make a commercial well.

Four wells in the Fort Collins Field are close to the Dakota sand and completions are expected in the near future. All of these wells are being drilled by the Fort Collins Producers Co., a subsidiary of the Union Oil of California.

The Illinois Pipe Line Co. is laying a short line to connect the tank on Rex Lake, in Albany County, with the railroad. The Ohio Oil Co. has two producing wells on the Rex Lake Dome and the production which is recorded weekly in the Rocky Mountain runs, is sent from the small tanks at the wells to the 55,000-bbl. tank about a mile away. The line laid by the Illinois is about 4 miles long and ends at a loading rack so shipments can be made by rail.

Deep Test in Dallas Field

The Derby Dome Wyoming Oil Co. is starting a deep test in the Dallas Field, in Fremont County, south of Lander. This field is the oldest oil operation in Wyoming and produces a black oil that is used for fuel oil and also shipped to Casper where it is made into asphalt after the light cuts have been removed. The production comes from the Embar sand and the Tensleep has been tested also. These sands are about 1,000 feet below the surface and no well has ever been drilled below the Tensleep. The test now starting is to drill through the Madison lime and make a test of the Amsden and Madison sands.

The Lake Valley Oil Co., a local company of Rawlins, Wyo., is drilling a well in the Eight Mile Lake structure in Carbon County. The hole ran into some shale oil the past week that showed for a commercial well for a short period, then dwindled.

The Midwest Refining Co. completed six wells in the Salt Creek Field the past week through its subsidary companies. The Wyoming Associated Oil Co. found a producer making 290 bbls. on Section 35-40-79 at 1,397 feet, and a 35-bbl. well on Section 24-40-79 at 1,835 feet. The same firm brought in a producer good for 20 bbls. on Section 14-40-79 at 1,927 feet.

The Salt Creek Consolidated Oil Co. found a second sand producer of 20 bbls. on Section 31-40-78, and the Midwest Oil Co. and Wyoming Associated, drilling jointly, found a producer good for 100 bbls. on Section 25-40-79 at 1,850 feet.

The Wyoming Oil Fields Co. found a 15-bbl. well on Section 22-40-79 at 1,848 feet.

The Kasoming Oil Co. is drilling a deep sand test on Section 15-40-79 and the hole is at 2,749 feet. The Continental's deep test is still fishing for $4,000 worth of diamonds in the bottom of the hole due to the loss of a diamond bit at 2,720 feet.

Weekly Field Runs

Salt Creek	87,700
Teapot	1,500
Big Muddy	3,220
Grass Creek	4,400
Elk Basin	820
Greybull	60
Rock River	3,320
Lance Creek	1,770
Poison Spider	60
Osage	200
Hamilton Dome	870
Mule Creek	1,370
Lander	280
Byron	60
Pilot Butte	Storing
Lost Soldier	600
Ferris	2,500
Cat Creek	60
Sunburst	2,000
Craig	3,500
Fort Collins	782
Boulder	870
Florence	70
Rangeley	565
Tow Creek	300
Artesia	251
Rattlesnake	1,100
Hogback	275
Miscellaneous	620
	300
Total	90,533

MEXICAN FIELDS

(Continued from Page 36)

district, Cia. Petroleum Financiera, No. 1, Lot 9 Paciencia de Aguacate, finished a failure at 2,390 feet.

At Cacalilao

Drilling operations in the Cacalilao sector of the northern fields as the week ended follow: La Corona Petroleum Co., in Lot 1; No. 152 is in the San Felipe at 1,255 feet; No. 171 is in the same formation at 1,230 feet and No. 172 has cemented 18-inch at 1,300 feet. In Lot 4, No. 169 is fishing at 1,930 feet, and No. 170 is in lime at 2,165 feet. In Lot 3, No. 174 is in shale at 500 feet.

International Petroleum Co.'s operations in Lot 5 follow: Nos. 170 and 172 are in white lime at 2,150 and 2,195 feet respectively: No. 173 cemented 8-inch in the San Felipe at 1,200 feet; No. 166 is in the same formation at 1,410 feet; No. 174 is in gray lime at 1,765 feet; No. 185 is in gray shale at 285 feet; No. 177 is in the San Felipe at 1,305 feet; No. 178 is in gray shale at 757 feet; No. 181 cemented 8-inch in the San Felipe at 1,200 feet; No. 183 is in gray shale at 195 feet; No. 187 is in shells at 1,069 feet, and some five derricks are going up on locations. In Lot 3, International's No. 184 is in gray lime at 1,510 feet. Mexican Sinclair Petroleum Corp.'s No. 54, Lot 2, cemented 8-inch in the San Felipe at 1,150 feet; No. 106, Lot 3, is in blue shale at 410 feet. Mexican Petroleum Co.'s No. 21, Lot 1 Cacalilao is in the San Felipe at 1,965 feet. New England Fuel Oil Co.'s No. 10, Lot 3, Cacalilao, is drilling in the San Felipe around 1,900 feet, with some showing. Transcontinental Petroleum Co.'s operations in Lot 4 follows: No. 158 is in lime at 1,845 feet; No. 163 running 8-inch in the San Felipe at 1,285 feet; No. 165 in lime at 2,160 feet; No. 176 in the San Felipe at 1,340 feet; No. 177 has been abandoned for a junked hole and derrick is being skidded for No. 177-A; No. 178 is in lime at 2,000 feet, having had a salt water pocket at 1,900 feet; No. 186 cemented 10-inch in the San Felipe at 1,360 feet; No. 187 is in shells at 1,175 feet. In the Paciencia, just above Cacalilao, Transcontinental's No. 25 cemented 10-inch in hard gray shale at 1,070 feet; No. 26 cemented 10-inch in the San Felipe at 1,205 feet; No. 30 is in the same formation at 1,320 feet.

Panuco

In the older sectors of the Panuco Field operations follow: Aloya and others, No. 1 Tampalache, is in the San Felipe at 1,775 feet. La Corona Petroleum Co.'s No. 96 Ojital, is in gray lime at 1,850 feet, and No. 98, same, cemented 6-inch in a similar formation at 1,215 feet. Cochran and others' No. 7, Lot 4, E. Maguabes, which has had casing trouble for sometime resumed and is in gray lime at 1,720 feet, waiting for cones. East Coast Oil Co.'s No. 20 Laguna de

DAYTON

THE Dayton No. 5 All Steel Extra Long Coupling or Sleeve affords permanent repair of leaks and breaks—when used on screw lines it provides for line expansion and contraction.

THE DAYTON PIPE COUPLING CO.
DAYTON OHIO, U. S. A.

Ideal Colorado Mountain Home For Sale—20% Below Cost

This completely furnished Japanese style Summer and Winter home, located twenty-five miles from Denver, on beautiful Bear Creek Canyon Boulevard, is one of the finest and most gorgeous in the region—ideal for health seekers and lovers of the Colorado Rockies—all furnished and ready for immediate occupancy. Built of selected field stone and quartz rock. Four bedrooms, two tiled bathrooms, private gas and electric light plants, modern high pressure water system, sanitary sewerage system, large glass inclosed porches, hot water heating system and large stone fireplace, beamed ceilings, lawn, shrubbery, ice house, stable double garage with caretaker's quarters above, chicken run, garden, large acreage adaptable for many cabin sites in a well wooded, scenic setting. One thousand feet of privately owned fishing stream traverses property. Sawmill and implements, everything complete, new and modern. One hour from Denver, fifteen minutes from Troutdale Hotel and Motor Club's country home. Privately owned telephone line. One of the finest private lodges in Colorado. It is the greatest possible value. Over $50,000 has been spent on this beautiful home. Must be sold and will be sacrificed for considerably less. Photographs and complete details gladly sent to anyone interested. Address

W. O. Scholtz
care Menah San
Evergreen, Colo.

or

Harriet L. Raines
Brown Palace, Hotel
Denver, Colorado

Sudden Temperature Changes

—what happens to the fire brick construction in your boiler furnaces and stills?

Will the joints open up? Will the brick chip off and go to pieces from the effects of repeated expansion and contraction?

Or are your fire brick dipped in ADAMANT, laid up, and their exposed surfaces coated with ADAMANT, making a stronger, more durable structure that ALLOWS FOR EXPANSION AND CONTRACTION?

Investigate ADAMANT, the high temperature cement that retains its bond through all temperatures.

There is a distributor near you, who will be glad to tell you more about ADAMANT.

ADAMANT DISTRIBUTORS
Beaumont, Texas
Norvell-Wilder Hardware Co.
Chicago, Ill.
Wm. E. Dee Company
Cleveland, Ohio
H. W. Jarrett
Dallas, Texas
The Murray Company
Denver, Colo.
Thompson-Whiting Company
Houston, Texas
Norvell Wilder Hardware Co.
Kansas City, Mo.
Union Material & Supply Co.
Los Angeles, Cal.
Industrial Supply Company
New Orleans, La.
Woodward Wight and Company, Ltd.
St. Louis, Mo.
Reed Railway Supply Company.
San Antonio, Texas
San Antonio Mach. & Supply Co.
San Francisco, Cal.
W. E. Mushet Company
Toledo, Ohio
Toledo Builders Supply Co.
Tulsa, Okla.
Reed Railway Supply Company

May we send you a copy of this interesting booklet on better fire brick construction?

Botfield Refractories Company
783 South Swanson St.,
Philadelphia, Pa.
New York Office:
5th Floor 110 W. 34th Street

Whenever You Use A Fire Brick, Use

ADAMANT
FIRE BRICK CEMENT
Reg. U. S. Pat. Off.

la Milpa, is in white lime at 2,118 feet; No. 28, same, is rigging rotary at 1,545 feet, in gray shale, and No. 29 is rigging. International Petroleum Co.'s No. 1 Piedras cemented 8-inch in gray lime at 1,159 feet. Mexican Gulf Oil Co.'s No. 16 Lopez is drilling in shale at 870 feet. National Oil Co.'s No. 14 Chijoles cemented 8-inch in gray lime at 1,620 feet; No. 15 did not turn out a 1,000-bbl. well as reported week before last, hence it is being deepened at 2,220 feet, slopping 100 bbls; No. 17 is in gray shale at 725 feet, and No. 18 is in blue shale at 1,010 feet. Palmer & Payne, No. 1, Lot 3 Tamismolon is in gray shale around 1,600 feet. Transcontinental Petroleum Co.'s No. 20 Barbarena is drilling in shale at 150 feet.

Corcovado

In the Corcovado sector drilling operations follow: Cosmos Oil Co.'s Lot G: No. 8 is in gray and brown lime at 1,740 feet; No. 15 is in the San Felipe at 1,360 feet; No. 18 is in gray shale at 1,100 feet; No. 20 is in the San Felipe at 2,000 feet; No. 28 is in the San Felipe with some gas reported at 1,275 feet; No. 30 is in green and gray lime at 2,090 feet; No. 31 is in brown lime with a showing at 2,100 feet; No. 32 is in blue shale with some shells at 1,400 feet; No. 50 is 1,000 feet in gray shale; No. 51 is in the same formation at 660 feet, and some 14 locations are rigging and getting ready to spud. La Corona Petroleum Co.'s operations in Lot 6: No. 8 is in the Tamasopa at 2,680 feet; No. 9 set 10-inch in gray shale at 600 feet; No. 10 is in gray shale at 1,255 feet; in Lot 11, No. 6 is in the San Felipe at 1,385 feet, and No. 7 is in shale with some shells at 1,180 feet. Intermex Oil Co.'s No. 5 Lot 4-D is underreaming in gray lime at 1,854 feet, and No. 6, same lot, is waiting for a drill stem at 1,200 feet. Leonard and others' No. 3-A, Lot 11, cemented 8-inch at 1,280 feet in the San Felipe. Mexican Sinclair Petroleum Corp.'s operations in Lot 1: No. 3 is in the San Felipe at 1,270 feet; No. 5 cemented 10-inch in the same formation at 1,285 feet. Transcontinental Petroleum Co.'s No. 2, Lot 6, is in the San Felipe at 1,230 feet; No. 6, same, is spudding. Rich Mex Oil Co.'s 3-B, Lot 2, is drilling about 1,900 feet in the San Felipe. Mexican Gulf Oil Co.'s operations in Lot 4: No. 24 is in white and brown lime at 2,190 feet; No. 26, is in the San Felipe at 1,240 feet; No. 30 is in a broken lime at 1,065 feet; No. 33 cemented 8-inch in the San Felipe at 1,255 feet.

South Fields

In the South Fields. Huasteca Petroleum Co., (Mexican Petroleum), No. 61 Cerro Azul is spudding; No. 63 is in gray shale at 270 feet, and No. 64 is in the same formation at 1,040 feet. Down in Tierra Blanca, Huasteca's No. 37 cemented 10-inch in brown shale at 1,823 feet; No. 41 is in the San Felipe at 2,042 feet. Up in Tres Hermanos, No. 7 is in gray shale at 4,080 feet; No. 9 is in a sand at 2,577 feet; and over to the east in Granadilla, No. 1 is in shale with chalk streaks at 4,512 feet. International Petroleum Co.'s No. 50 Toteco cemented 6-inch at 1,620 feet in a shell. Mexican Eagle Oil Co.'s No. 24, Lot 132 Amatlan, is in brown lime at 5,097 feet; No. 6, Lot 161 Chinampa, is in shale at 2,049 feet; No. 16 San Geronimo is in gumbo at 1,700 feet. Way south, No. 2 Mecapepec is in a sandy shale at 3,137 feet and No. 1, Lot 2 Escobal recemented 12½-inch in gray shale at 1,521 feet. Transcontinental Petroleum Co.'s No. 3, Lot 198 Amatlan, is running 8-inch in hard gray shale at 1,800 feet. Cortez Oil Corp.'s No. 11 Aguada is in gray lime at 4,150 feet.

Miscellaneous

In the northern fields the following reflects the status of miscellaneous operations: In the Topila sector, La Corona Petroleum Co.'s No. 19 is in shale at 960 feet. Credito Petrolero's No. 15, Lot 10 Paciencia da Aguacate is in brown lime with a showing of oil at 2,348 feet. East Coast Oil Co.'s No. 4, Lot 2 Tamboyoche, is rigging. Hatchman and others' No. 3 Tobalo is in shale at 925 feet. Mexican Oil Co.'s No. 5, Lot 19 Tamboyoche is in the San Felipe at 2,200 feet, gassing.

At Ebano, Mexican Petroleum Co.'s Chapacao: No. 10 is in gray lime at 2,085 feet; No. 20 is running 10-inch at 1,250 feet in the San Felipe; No. 22 is in the San Felipe at 1,425 feet; No. 26 is in pink shale at 490 feet; No. 31 is in blue shale at 430 feet; and Nos. 32 and 35 are in the same formation at 765 and 390 feet respectively.

In Quebrache, Globe Petroleum Co.'s No. 5, Lot 80, is spudding.

In its Chapacao railway right-of-way, National Lines' No. 3, cemented 8-inch in gray lime at 1,217 feet; No. 4 is rigging; No. 8 is in gray lime at 1,770 feet, and No. 10 is in shale at 230 feet.

In the Caracol, Venable and others' No. 24 cemented 8-inch in the San Felipe at 1,610 feet, and No. 27 is rigging.

At El Barco, Mexican Gulf Oil Co.'s No. 70 is in gray lime at 1,400 feet. Kern Mex Oil Fields, Ltd., No. 10 is in white lime and chert at something over 2,200 feet.

CALIFORNIA

(Continued from Page 36)

in addition to this hole, which is standing cemented at 758 feet, is drilling ahead in No. 96 at 2,420 feet.

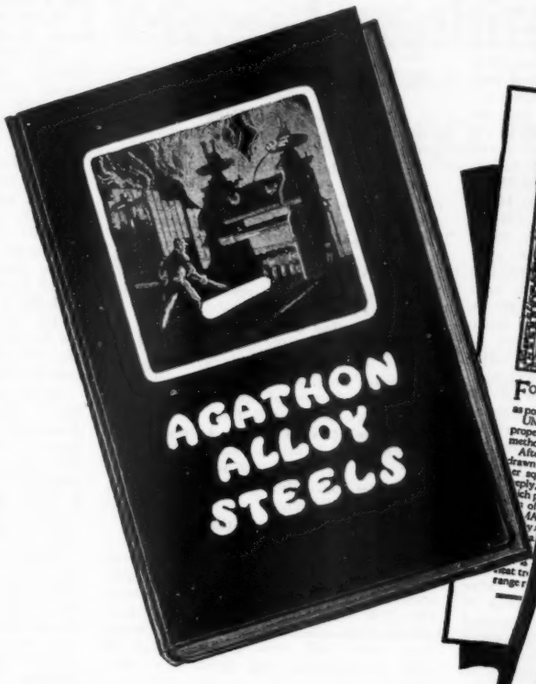
Newport

The Interstate has not yet tested out the sand found in No. 2 Mesa at 652 feet but a production test is scheduled for a little later this week. A core sample taken a week or so ago looked unusually promising and the company has hopes of developing a better production than that found in this area heretofore. A little heavy oil was produced by several operators during the past week for fuel consumption but nothing was shipped out of the area. The Bruce Oil Co. is drilling ahead in No. 2 Newport at 398 feet, the boiler fuel necessary being secured from the company's first hole. The Empire Drilling Co. is building a rig for No. 1 Strowbridge and judging by the progress made to date, should spud in shortly. The Newport Petroleum's tunnel is reported at 400 feet, the present formation being a shale and heavy oil sand. John E. Otto spudded in his No. 1 Newport and made 200 feet of hole up to the present time.

The Shell finished plugging No. 1 Bixby at Seal Beach and is officially abandoning it as a dry hole. A little difficulty is being experienced in cleaning out No. 2 Bryant, which was drilled to 4,409 feet and the crew has not been able to get below 3,915 feet. No. 3 Bryant, however, is progressing satisfactorily and although it was spudded in after No. 2, it is now a little deeper. No. 3 is reported at 4,420 feet with a prospective completion depth around 4,620 feet. No. 1 on this lease made 60 bbls. of oil yesterday and 2,000 bbls. of water, the large cut being due to edgewater. The Associated is drilling ahead in No. 1 Hellman at 740 feet. This hole will be watched very closely and cored frequently after passing 3,500 feet, since it would be advantageous to determine whether there is an upper producing horizon on this property in addition to the expected sands between 4,600 and 4,700 fee.

Southern California Wildcats

The Winwell Oil Co. failed to secure a water shut off at Hawthorne and the hole has been recemented at 5,522 feet. An oil showing was reported some time ago but water trouble prevented a test. The Manhattan-Pacific Oil Co. has not yet drilled out the cement at Hermosa Beach but it is believed that work will be resumed within the next few days and the hole carried down if the water trouble has been overcome. A core taken in No. 1 Stubbs of the Shell at La Mirada was negative at 3,280 feet and drilling is being resumed. The Bixby-Midfield is in a hard brown shale at 4,010 feet in its Los Alamitos test, no showings of importance having been found to date. The Magnolia Petroleum is credited with several oil showings between 3,500 and 3,600 feet and, while they react favorably to the ether test, it is not believed that the present formation will be productive. Core samples indicate that gray sand



Get This Valuable Handbook!

Contains numerous charts and tables and describes the physical properties of nineteen popular analyses of Agathon Alloy Steels. Invaluable to engineers and designers. Sent *free* upon request.

The Central Steel Company
Massillon, Ohio

Swetland Bldg., Cleveland
Peoples Gas Bldg., Chicago
University Block, Syracuse
Book Building, Detroit
Aeolian Bldg., New York
Widener Bldg., Philadelphia

AGATHON ALLOY STEELS

predominates with considerable brown shale at times. The Associated cored its Saugus wildcat at 4,600 feet but the sample secured did not show any oil indications. The Union is drilling by a bit, lost in its Newhall test at 2,144 feet. This hole has lost considerable time since being spudded.

No. 1 Newlin of the Union at Ocean Park Heights is taking a rather doubtful appearance, inasmuch as no showings of any kind have been reported up to the present time. The formation at 4,145 feet is a gray sand. The Standard is drilling in a conglomerate at Paulerino and a core taken at 2,620 feet did not show anything favorable. The same company has cemented No. 1 Hadley at Rivera at 2,586 feet, the 11-inch being landed for protective purposes only and not as the result of any showing found. Gale S. Hoyt is building a rig for No. 1 Irvine at Paulerina and will probably spud in within a short time. This test is being put down by the Gulf Oil Co. The Pan-American has just spudded in No. 1 Crest at Palms and while the actual depth is not available, the hole should be at least 500 feet in depth.

Northern California Wildcats

None of the important wildcats drilling north of the Tehachapi showed any favorable indications during the week, in fact, the reports were rather unfavorable, since several abandonments were listed. Considerable prospecting work should continue during the coming summer and it would not be surprising if the Valley yielded a new field before the close of the current year. The Fresno-United Oil Co., near Raisin City, is drilling ahead in a brown shale at 5,447 feet, having passed through the oil sand previously reported. The Associated, however, is apparently convinced that the area has some merits, as evidenced by the work being undertaken. The company has just spudded in on Section 14-15-18, and is cleaning up the debris and putting the Fresno Petroleum's old hole in shape for new work. Field scouts credit the California Petroleum with acquiring approximately 1,000 acres in this general vicinity recently. The company is reported to have paid a $25,000 cash bonus and agreed to drill on one-sixth royalty basis. No immediate drilling is expected however, unless the Associated or Fresno-United should secure production.

The Standard is abandoning its San Emidio test on Section 5-10-22 at 2,254 feet and although the hole on Section 28-11-22 is still being carried down, it looks like a prospective abandonment. The company has reached a depth in the latter hole of 5,660 feet, the prevailing formation for the past few hundred feet being a blue shale. The Chanslor-Canfield Midway Oil Co. has not yet recovered from the fishing job which developed in its Delano wildcat at 3,743 feet a few weeks ago. The Standard has not yet spudded in on Section 12-25-19, between Lost Hills and Kettleman Hills, but it is expected that work will be started within the next 30 days. This hole will bear watching, as the area looks fairly promising for deep production. On the McKittrick Front both the Standard's No. 1 and No. 2 are in the blue shale, the former being down 1,320 feet and the latter 1,450 feet.

The Union filed an abandonment notice on its Rio Bravo wildcat on Section 4-29-25 at 6,053 feet. The action of the company, however, was not surprising in view of the fact that not a single favorable indication was noted from the grass roots down to the depth of abandonment. A mean fishing job was also a contributing factor and hastened the order to suspend work. The Main Oil Co.'s test at Wasco staged a rather spectacular blowout during the latter part of the week and although it continued for several days before sanding up, there were no other favorable indications of any kind. A shut off was not secured at 5,305 feet and considerable salt water accompanied the 5,000,000 feet of gas credited to the well. The Snowolene on Jacalitos Dome, near Coalinga, reports 4,426 feet of hole on Section 22-21-15 and the present formation to be a hard shale.

The General Petroleum was not successful in recovering the drill pipe twisted off in No. 1 Oschener in the Kettleman Hills and orders were issued to sidetrack So far fairly good progress has been made in getting by and the company may be in a position to resume drilling on this 6,407-foot hole within a short time. The Marland is in a blue shale on Section 12-22-17 at 5,077 feet and numerous core samples will probably be taken at regular intervals from now on.

N. LOUISIANA-ARKANSAS

(Continued from Page 40)

2,265 feet. The well is on the north shore of Caddo Lake.

Claiborne Parish

Woodley & Collins abandoned their test on the Oakes lease in Section 8-20-5, at 3,005 feet. It is 9 miles southeast of Homer.

Ouachita Parish

The Palmer Corp. completed No. 2 Potts, Section 12-10-4e, making 30,000,000 feet of gas at 2,158 feet.

Columbia County, Arkansas

Arkansas Fuel Oil Co. abandoned No. 2 Hardy, Section 1-19-22, at 775 feet. It is 8 miles northwest of Haynesville and 10 miles southwest of Magnolia, and tested a fresh water at 695 feet.

Little River County, Arkansas

Gaines and others have abandoned their test on the Goodrun Timber Co. lease, Section 15-13-29, after drilling to a depth of 3,908 feet.

Drilling Operations
Union County, Arkansas

Drilling in the Union County area of the Smackover Field is now practically confined to the deep sand territory with very few wells drilling in any other part of the field. At the close of the week, there were 206 wells drilling, with 26 rigs, 39 derricks and three new locations.

J. A. Alphin is drilling at 2,010 feet in No. 1 fee, Section 4-16-15; Amerada Petroleum Corp. set 6-inch in No. 5 Flenniken and is drilling No. 6 at 1,545 feet, Section 4-16-15, setting 4½-inch casing at 2,360 feet in No. 1 Lyell and drilling at 1,875 feet in No. 6, Section 3-16-15. Arkansas Fuel Oil Co. is drilling at 2,375 feet in No. 5 Ferguson, Section 6-16-15, at 1,430 feet in No. 5 Alphin, Section 11-16-15, set 12½-inch at 178 feet in No. 1 Burton, Section 33-16-15, rigging up to drill No. 11 Cullens, Section 3-19-15, drilling No. 3 Murphy, and derrick up for No. 4, Section 8-16-16, and drilling No. 1 and No. 2 Scott, Section 1-16-17.

Barnsdall & Foster are arranging to deepen No. 2 and No. 3 J. Murphy, Section 17-16-15, completed in the shallow sand, swabbing 600 and 400 bbls. respectively; R. A. Bristol is deepening No. 1 Parkerson, completed a 20,000,000-foot gas well; Broderick & Calvert are down 2,460 feet in No. A-3 Murphy, Section 8-16-15, and Carrigan and others 2,260 feet in No. 1 Wingfield, Section 5-16-15.

J. W. Clark is drilling at 1,475 feet in No. 6 Cook, Section 17-16-15, at 2,400 in No. 1 Palmer, Section 9-16-15, and set 10-inch at 500 feet in No. 4 Palmer, same section. Clark & Melat have a fishing job at 2,446 feet in No. A-2 Wells, Section 15-16-15; Coates & Sewell are drilling at 2,760 feet in No. 1 Springer, Section 36-17-16; Sam Cook is drilling at 500 feet in No. 2 Murphy, Section 9-16-15, and Crawford & Sebastain set 10-inch at 328 feet in No. 7 Graves, Section 3-16-15.

J. E. Crosbie is deepening No. A-1 Lawton, completed in the shallow sand, flowing 2,500 bbls., Section 10-16-15, and same section is drilling No. A-3 Lawton at 800 feet, rigging up to drill A-4, drilling C-5 at 1,650 feet and C-6 at 1,200 feet The Crusader Oil Producing Co. is rigging up to drill No. 6 Graves, and set 6-inch at 2,350 feet in No. 7, Section 3-16-15, and rigging up to drill No. 4 Lyell and drilling at 2,315 feet in No. 5, Section 3-16-15.

H. L. Dale set 6-inch casing at 2,487 feet in No. 2 LeCroy, Section 17-16-15; Eason and others have three rigs running on the Palmer lease in Section 9-16-15, and derrick up for No. 4 Murphy, Section 15-16-15; Federal Petroleum Co. has seven rigs running on the Lawton lease in Section 10-16-15, and rigging up to drill two on the Flenniken in Section 6-16-15; Grimes & Jones are drilling at 2,125 feet in No. 4 Van Hook, Section 7-18-14, and Gulf Refining Co. has 25 rigs running in the deep sand territory.

F. C. Henderson is arranging to deepen No. 2 Smith, Section 18-16-15, completed a 15,000,000-foot gasser in the shallow sand; Hickman and others set 10-inch at 465 feet in No. 11 Graves, Section 3-16-15. Higgins Oil & Fuel Co. is drilling at 1,450 feet in No. 1 McGraw, Section 6-16-15, and Hollyfield and others have a fishing job at 2,400 feet in No. 10 Giller, Section 11-16-15.

The Houston Oil Co. has two wells drilling on the Miller lease in Section 3-16-15, and tested a small show of oil at 2,656 feet in No. 1 Parks, Section 8-16-16; Humble Oil & Refining Co. is drilling at 2,340 feet in No. B-5 A. Flenniken, Section 9-16-15, at 1,950 feet in No. 3 B. Goodwin, Section 3-16-15, and at 1,500 feet in No. 8 Pate, Section 10-16-15, and Imperial Oil & Gas Producing Co. is down 100 feet in No. 5 Murphy and rigging up to drill No. 7, Section 9-16-15.

Ab Jones is drilling at 1,980 feet in No. 1 Tatum, Section 7-16-15; E. M. Jones has three rigs running on the Cook lease in Section 16-16-15; Laurel Oil & Gas Co. is coring No. 1 Houston, Section 12-16-15, at 2,453 feet, and Lion Oil & Refining Co. has ten rigs running and derricks up for nine more in the deep sand territory.

Lyles and others have three wells drilling on fee land in Section 3-16-15; Magnolia Petroleum Co. is drilling No. 2 Bradford, Section 8-16-15, at 2,190 feet, No. 4 Powell, Section 19-16-15, at 2,675 feet, and bailing to test four feet of sand at 2,260 feet in No. 2 Stout Lumber Co., Section 1-16-17. The wildcat test on the Chandler lease in Section 4-19-14, southeast of the El Dorado Field, tested dry at 2,340 and 2,350 feet and will be abandoned.

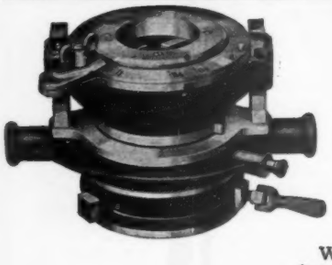
Marr & Wood set 10-inch at 400 feet in No. 2 Murphy, Section 17-16-15; Mazda Oil Co. has two wells drilling on the Lawton lease, Section 10-16-15; McCorkle and others are drilling at 2,425 feet in No. 1 Murphy, Section 8-16-15, and R. J. McMurray at 1,800 feet in No. 1 Hill, Section 5-16-15. Murdock and others are drilling at 1,350 feet in No. B-1 Bilyew, Section 8-16-15, and O. G. Murphy at 2,000 feet in No. 4 Murphy, Section 9-16-15. No. 2 Murphy tested 300 bbls. at 2,447 feet and arranging to swab 15 feet of sand at 2,452 feet.

Natural Gas & Petroleum Co. has four rigs running on the Bilyew lease in Section 9-16-15, eight on the Murphy leases, Sections 8, 9 and 17, one on the Lawton, Section 10-16-15, and two on the Orna, Section 5-16-15; the Ohio Oil Co. has two wells drilling on the Murphy lease, Section 9-16-15 and three on the Pate, Section 10-16-15. Page and others are coring No. 5 Murphy, Section 7-16-15, and Penguin Oil Co. is drilling at 1,250 feet in No. 3 Sandford, Section 6-16-15, and has derrick up for No. 3 Murphy, Section 8-16-15.

Phillips Petroleum Co. is drilling at 2,075 feet in No. 5 Alphin, Section 11-16-15, and bailing to test five feet of sand at 2,400 feet in No. 8 Giller, Section 10-16-15; Pure Oil Co. has three rigs running on the Bilyew lease, Section 8-16-15, and arranging to deepen No. 3 Friend, completed a 35-bbl. pumper in the shallow sand. A. H. Ramage and others are drilling at 1,600 feet in No. 3 Cook, Section 16-16-15, and Roxana Petroleum Corp. has four rigs running on the Bilyew lease, Section 9-16-15, ten on the Flenniken, Sections 5, 8 and 10-16-15, and three on the Hardy-Murphy, Section 9-16-15.

Shreveport Oil Corp. is drilling Nos. B-1 and B-2 Murphy and rigging up to drill B-3, Section 9-16-15; Simms Oil Co. has four running rigs on the Cook lease in Section 16-16-15, and Standard Oil Co. has two wells drilling, four rigs and five derricks on the M. W. Hardy land in

It Pays To Use Good Tools



Always Ready to Use

No. 26 Beaver Ratchet
1 to 2″ Adjustable

Why bother with loose dies and bushings—when No. 26 Beaver Ratchet, like all Beavers, threads all sizes by simply shifting the dial plate to size. Changes from one size to another instantly. Universal chuck does away with loose bushings. Narrow receding dies make 2-inch easy with one hand. For close work as a ratchet—or for bench work as a plain stock—2 handles furnished.

Built to stand the gaff in the oil fields—and always cut perfect threads. Will last a lifetime. The biggest value in the realm of die stocks because of its advantages that no other die stock has. Complete within itself—Always ready for use.

Oil Field Supply houses sell thousands—buy through your supply house.

A COMPLETE CATALOG FOR YOU

The Pocket Beaver Catalog covers all Beavers from ⅛ to 12″. You ought to have a copy. Write for it.

THE BORDEN COMPANY
514 Dana Ave.,
Warren, Ohio

BEAVER

"The Easiest Way to Cut Good Threads"

Detroit Graphite Company

DETROIT, U. S. A.

DEGRACO PAINTS

All Colors for Your Particular Needs

Makers of paints for the Refinery, Tank Farm, Pipe Line, Tank Cars and Stations. A complete painting service.

Write for catalogue on paints for the oil industry.

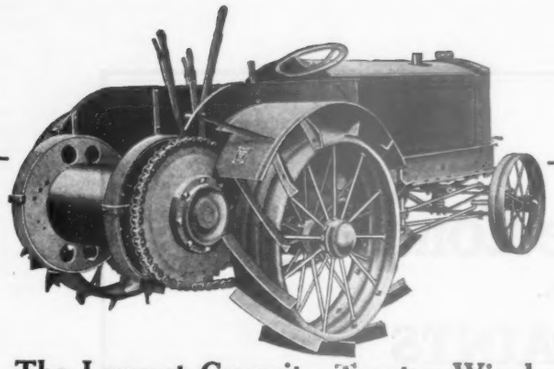
Offices and warehouse stocks in all principal cities

The Cross Cracking Process

The Cracking Process you want is the one that will make the greatest possible profit with the maximum of safety. The Cross Process solved this problem for 26 refiners and it will do the same for you.

THE M. W. KELLOGG CO.
90 West St.,
New York City

Branch Offices:
700 Baltimore Ave., Kansas City, Mo.
2929-19th St., San Francisco, Cal.
304 Lane Mortgage Building, Los Angeles, Cal.



The Largest Capacity Tractor Winch With Widest Range of Speed

Rock Island Model 70 Tractor Winch

Manufactured by

ROCK ISLAND PLOW CO.

A capacity of 10,000 pounds pull on a single line. *Will handle the rods in any oil well,* pull them slowly, stop at any point desired and then go on. Speed can be increased as load decreases.

No bull wheel necessary —pulls tubing directly on the drum—a big saving in dollars and cents.

Complete safety for operator—drum and working lines inside derrick—operator and control mechanism outside. Powerful brakes. Operator faces the well with unobstructed view of the work.

Four-cylinder, heavy duty Waukesha motor with friction transmission, Dixie magneto with impulse starter, Stromberg carburetor, Air-cleaner and ball and roller bearings.

Sold by

C. F. CAMP CO., Tulsa, Okla.

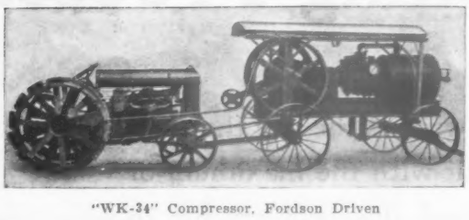
14 E. 7th St. **P. O. Box 289**

You Can do it quicker with Air

SULLIVAN AIR COMPRESSORS

and

SULLIVAN AIR TOOLS



"WK-34" Compressor, Fordson Driven

ARE ready to your hand to speed up your construction work.

Portable compressors may be had in several types and sizes, mounted to suit your country.

Sullivan portable air hoists, Rock Drills, Concrete breakers, Clay Spaders, etc., are standard equipment which will save you much time and labor as well.

"Turbinair," Single Drum Hoist

Ask for the Sullivan catalogues

SULLIVAN MACHINERY COMPANY
88 East Adams St., Chicago

Sections 4, 9 and 10-16-15, with No. 12 McClannahan, Section 6-16-15, drilling at 200 feet.

Staves and others are drilling at 2,375 feet in No. 1 Cook, Section 16-16-15; D. N. Stewart is drilling No. 1 Murphy at 1,450 feet and setting 4½-inch casing in No. 2, Section 9-16-15; Sun Oil Co. is swabbing to test 11 feet of sand at 2,383 feet in No. 5 Hatfield, Section 6-16-15, arranging to deepen No. 1 Hatfield, Section 6-16-15, and No. 6 Hays, Section 3-16-15, and is drilling No. 9 and No. 10 Hays in Section 3-16-15.

The Sure Oil Co. has two wells drilling on the Flenniken lease in Section 5-16-15; The Texas Co. has three rigs running on the Alphin land, Section 3-16-15, three on the Callow, Section 4-16-15, three on the Graves, Section 3-16-15, four on the Hays, Section 4-16-15, one on the Howard and one on the Langley, Section 7-16-16, and is rigging up to drill No. 2 E. G. Murphy, Section 14-16-15.

Thurman and others are drilling at 500 feet in No. 1 Wingfield, Section 5-16-15; Tidal Osage Oil Co. is at 2,500 feet in No. 5 Vestal, Section 17-16-15; United Central Oil Corp., set 4½-inch at 2,484 feet in No. 2 Murphy and has derrick up for No. 5 Section 8-16-15, and Unity Petroleum Co. has three rigs running on the Roper land in Section 3-16-15, and rigging up to drill No. 2 Lawton, Section 10-16-15. Wetherbee and others set 6-inch casing at 2,273 feet in No. 1 McGraw in Section 7-16-16.

Ouachita County, Arkansas

There was a noticeable increase in drilling activity in the east end of Ouachita County, where the producing field runs down into the deep sand territory. Some of the largest wells of the past week were drilled in this area and the deep producing territory is being steadily extended towards the north.

The Arkansas Fuel Oil Co. is waiting on standard rig in No. 4 Snyder, Section 34-15-15, with 900 feet of oil and 37 feet of sand in the hole at 1,982 feet; drilling No. 5 Snyder, same section, at 1,755 feet; Bailey Murray Oil Co. set 10-inch casing at 213 feet in No. B-1 Rhoten, Section 32-15-15, and set 10-inch casing at 318 feet in No. B-2 Rhoten, same section.

H. E. Clarke tested No. 2 Shirey, Section 36-15-17, dry at 2,308 feet, and swabbing to test 9 feet of sand at 2,319 feet; waiting on standard rig with 26 feet of broken sand in the hole at 2,385 feet in No. 4 Smith, Section 26-15-17; Clark and Melat drilling No. 2 Murphy, Section 4-16-15, at 2,150 feet; J. E. Crosbie has derrick up for No. 6 Berry, Section 33-15-15.

Dashko and others are drilling at 2,240 feet in No. 2 Joyce, Section 34-15-15; El Dorado Union Oil Co., coring at 1,830 feet in No. 1 Eagle Lumber Co., Section 17-12-15; drilling at 1,400 feet in No. 5 LeGrone, Section 36-15-17; Forest Oil Co., waiting on standard rig with 1,200 feet of oil and 15 feet of sand in the hole at 2,075 feet in No. 1 Arnold, Section 26-15-16; tested salt water and arranging to plug back with 4 feet of sand in the hole at 2,267 feet in No. B-2 Lewis, Section 26-15-16.

George and Jones' No. 2 Umsted, Section 4-16-15, flowed estimated 5,000 bbls. on April 27, with 70 per cent b. s. and water; let it flow for a few minutes, then closed it in and lost 4½-inch casing seat and now arranging to lubricate at 2,387 feet with 12 feet of sand in the hole.

Gilliland Oil Co. is arranging to run core barrel after testing salt water at 2,594 feet in No. S-5 Myar, Section 30-15-16; Gray and others set 12-inch casing at 80 feet in No. 5 Myar, Section 32-15-16, and drilling now at 600 feet.

Gulf Refining Co. has two rigs running in Section 33-15-15; drilling No. A-6 J. Goodwin, Section 5-16-15, at 1,100 feet; Humble Oil & Refining Co. has four rigs running in Section 5-16-15; set 10-inch casing at 80 feet in No. 1 Arnold, Section 26-15-16; set 6-inch casing at 2,007 feet in No. B-3 Berg, Section 30-15-15, and three rigs running in Section 6-16-15.

H. L. Hunt and others have two rigs running in Section 21-15-17; Imperial Oil & Gas Producing Co. bailing 8 feet of sand at 2,365 feet in No. 5 McClanahan, Section 6-16-15; D. N. Johnson has two rigs running, one in Section 34-15-15, and one in Section 29-15-16; E. M. Jones, drilling at 1,250 feet in No. 1 Wilson, Section 26-15-18.

W. R. Keever is waiting on standard rig with 30 feet of sand in the hole at 2,006 feet in No. 1 Neely, Section 27-15-16, Louisiana Oil Refining Corp. and others have two wells in Section 27-15-17, waiting on standard rigs; Leon and others have three rigs running in Section 4-16-15.

Lion Oil & Refining Co.'s No. 2 Hays is blowing wild, 500 bbls. of b. s. and water, with 25,000,000 feet of gas at 2,346 feet, Section 4-16-15; Marine Oil Co., fishing drill stem at 1,950 feet in No. 4 Hays, Section 4-16-15, drilling No. 5 Hays, same section, at 2,045 feet; derrick up for No. 6 Hays, same section; have two rigs running in Section 4-16-15, and derrick up for No. 8 Umsted, Section 5-16-15.

Miles and others are arranging to test 40 feet of sand at 2,060 feet in No. 2 Neely, Section 26-15-16; Natural Gas & Petroleum Co. set 10-inch casing at 504 feet in No. B-1 Hill, Section 5-16-15; Penguin Oil Co. is drilling No. 1 Umsted, Section 4-16-15, at 2,333 feet; Ramage and others drilling No. 4 Jeffus, Section 25-15-17, at 1,885 feet.

J. D. Reynolds is bailing to test 52 feet of sand at 2,392 feet in No. 2 Berg, Section 27-15-17, and same section derrick up for No. 3 Berg; Bazana Petroleum Corp., waiting orders at 1,925 feet in No. 3 Snyder; set 12-inch casing at 508 feet in No. 4 Snyder, and drilling at 1,465 feet, both in section 34-15-15; milling at 1,947 feet in No. 1-A Umsted, Section 4-16-15; also two rigs running in Section 4-16-15.

Shreveport Oil Corp. is drilling at 2,214 feet in No. 3 Umsted, Section 4-16-15.

Standard Oil Co. of Louisiana is rigging up No. 4 R. Bennett, Section 33-15-15; two rigs running in Section 4-16-15; set 4-inch casing at 2,365 feet in No. 2 George Powell, Section 34-14-15, and swabbing at 2,382 feet; set 6-inch casing at 2,379 feet in No. 7 Umsted, Section 32-15-15; reaming at 2,320 feet in No. 15 Umsted, Section 32-15-15; derrick up for No. 16 Umsted, same section; set 10-inch casing at 346 feet in No. 17 Umsted, same section, and drilling at 800 feet.

Sure Oil Co. is drilling No. 1 Hill, Section 5-16-15, at 2,300 feet; No. 2 Snyder, at 2,105 feet, Section 34-15-15; Swartz and others set 6-inch casing at 2,294 feet in No. 2 Burton, Section 30-15-7.

The Texas Co. is arranging to drill in with tools at 2,010 feet No. 3 Neely, Section 27-15-16; bailing to test 500 feet of sand at 2,288 feet in No. 5 Solmson, Section 32-15-16; Sid Umsted is coring at 2,348 feet in No. 1 fee, Section 4-16-15; Unity Petroleum Co., drilling at 1,920 feet in No. 4 Berry, Section 33-15-15; C. W. White, rigging up No. 1 Hill, Section 5-16-15.

O. F. Whittaker is swabbing to test 29 feet of sand at 2,401 feet in No. 1 Berg, Section 27-15-17; Wingfield and others, rigging up No. 1 fee, Section 5-16-15; set 6-inch casing at 2,338 feet in No. 1 Umsted, Section 4-16-15; drilling No. 2 Umsted, same section, at 1,900 feet; Woodley Petroleum Co., drilling at 1,740 feet in No. 5 Umsted, Section 4-16-15; rigging up No. 6 Umsted, same section; Zoller and Brown commenced drilling April 25, and drilling at 30 feet in No. 1 Myatt, Section 22-15-17.

Stephens Field, Ouachita County, Arkansas

The Buffalo Oil Co. set 10-inch casing at 180 feet in No. 1 Wesson, Section 26-15-19, and drilling at 1,900 feet.

Bossier Parish

Atlantic Oil Producing Co. is rigging up to drill No. 3 Bodcau in Section 23-23-12, in the Springhill district in the north end of the parish.

In the Bellevue district, Osborne and

Oh Doctor!

When you call a doctor do you hesitate in making a choice?

No. When you say doctor, you right then and there know who it is going to be.

You know this doctor has been in business for a long time, making a study of and writing prescriptions for cases of your kind.

He is a specialist. He has a world wide reputation.

He has been successful and your choice is based on your faith in this doctor to write a good prescription.

Now when we advertise that the steel used in the manufacture of our Sucker Rods is rolled to our special analysis, what does that mean?

It means that with thirty years of experience testing steel of different analysis, we have produced a steel which withstands the most severe abuse—It means that we are specialists.

Make Jones your Sucker Rod Doctor

S. M. JONES COMPANY

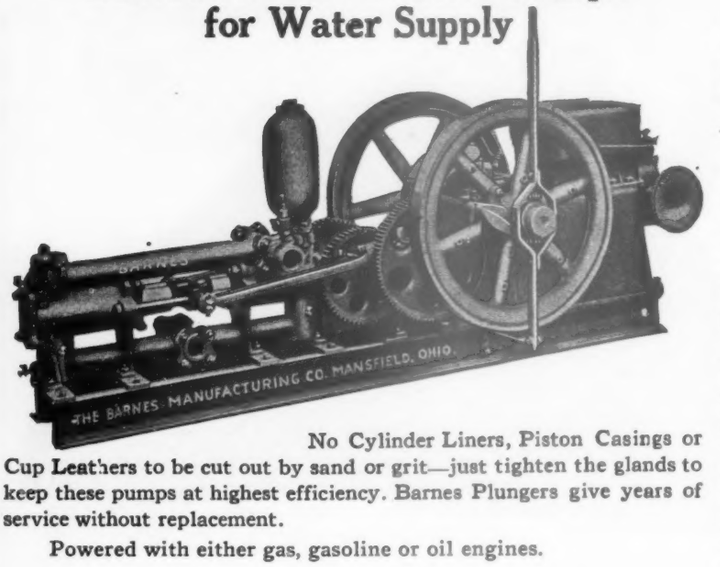
Toledo, Ohio

Mid-Continent Office: 601 Wright Bldg., Tulsa, Okla.

when you think of Sucker Rods think of JONES! he specializes!

BARNES

Outside Center Packed Pumps for Water Supply



No Cylinder Liners, Piston Casings or Cup Leathers to be cut out by sand or grit—just tighten the glands to keep these pumps at highest efficiency. Barnes Plungers give years of service without replacement.

Powered with either gas, gasoline or oil engines.

Carried in Stock for immediate shipment by

THE OIL WELL SUPPLY CO.
Write for Bulletin J7, 9 and 10

THE BARNES MANUFACTURING COMPANY
MANSFIELD, OHIO.

The use of plain end pipe with special couplings for high pressure gas lines is too universal to require comment. For this service deLavaud pipe is ideal as the diameter of the pipe is invariable and the surface perfectly smooth. In this material is combined the corrosion resisting qualities of cast iron with the strength needed for high pressure lines.

The picture above shows a section of an eight mile line of 12-inch pipe just completed by one of the largest gas companies in the middle west. This line was tseted with air pressure at 100 pounds per square inch and only 3 small leaks were discovered, all of which were easily corrected. The line has been in use for some time carrying gas at 40 pounds pressure and has given perfect satisfaction.

Address Publicity Dept., Burlington, N. J., for booklets
United States Cast Iron Pipe and Foundry Co.
General Offices: Burlington, New Jersey
SALES OFFICES:

Philadelphia—Henry W. Oliver Bldg.
Buffalo—957 E. Ferry St. 1421 Chestnut Street
New York—71 Broadway
Pittsburgh—
Chicago—122 S. Michigan Blvd.
Cleveland, Ohio—1150 E. 26th St., N. E.
Dallas, Texas—Magnolia Bldg.
Birmingham, Ala.—1711 American Trust Bldg.
San Francisco—Monadnock Building.
Minneapolis—Plymouth Building.
Kansas City, Mo.—Interstate Bldg.

others are drilling at 780 feet in No. 2 McDade, Section 28-19-11.

Caddo Parish

Arkansas Caddo Oil Co.'s No. 1 Nickerson in Section 30-19-15, 6 miles southwest of Mooringsport, is closed down at 2,600 feet.

In the Hosston district, Dixie Oil Co. is drilling at 2,325 feet in a deep test on the Jolly lease in Section 27-22-15; Lewis Oil Corp. completed No. 6 Caddo Mineral Land Co., Section 24-22-15, and arranging to pump, and S. L. Ricketts has made a location for No. 1 Levee Board in Section 23-22-15.

In the Pine Island district, Dixie Oil Co. is rigging up to drill No. 5 State, Section 24-21-15; Ohio Oil Co. is bailing casing at 2,257 feet in No. 16 E. K. Smith, Section 7-21-14, and rigging up to drill No. 17 E. K. Smith, Section 12-21-15; Odell & Lawton are rigged up ready to start drilling No. 3 Weiss, Section 15-21-15, and McGoldrick and others are drilling at 1,275 feet in No. 6 Murray, Section 14-21-15.

In the Oil City and Caddo Lake districts, Fortuna Oil Co. is arranging to pump No. 14 Doan-Thigpen, Section 5-20-15, and drilling in rock at 2,705 feet in No. 2 Levee Board, Section 8-20-15; Gulf Refining Co. is drilling at 2,770 feet in No. 69 Ferry Lake, Section 14-20-16, and arranging to pump No. 222, same section; Standard Oil Co. set 10-inch casing at 200 feet in No. 171 Stiles, Section 27-21-16.

George Baird has derrick up for No. 1 Duke Williams in Section 3-15-15, 9 miles southeast of Bethany.

Fortuna Oil Co. is drilling in lime at 2,333 feet in No. 1 Mtichell, Section 17-18-16, 4 miles west of Cross Lake.

Haynes Brothers are drilling at 2,485 feet in No. 1 Louisiana Live Stock & Planting Co., Section 8-19-16, 6 miles southwest of Mooringsport.

D. C. Richardson has started drilling another test in the Blanchard district, on the McGuffin lease in Section 3-18-15, 13 miles northwest of Shreveport.

Shreveport Producing & Refining Co. is rigging up to drill No. 1 Bryson, Section 17-17-16, 3 miles northwest of Greenwood, on the edge of the Waskom district; Waterman Drilling & Development Co. tested salt water at 950 feet in No. 2 Hunting Club, Section 8-17-16, and is drilling at 1,450 feet.

The Texas Co. is drilling in gumbo at 1,998 feet in a deep test on the Hutchinson lease in Section 15-15-12, in the south end of the Elm Grove gast district.

Woodley & Collins are drilling at 2,115 feet in No. 1 McVea, Section 23-19-14, east of Cross Lake and 9 miles north of Shreveport.

Claiborne Parish

Clark & Melat have drilled to 2,200 feet in No. Heard, Section 5-21-6, 5 miles northeast of Homer, and temporarily closed down.

Triangle Drilling Co. has a fishing job at 2,322 feet in No. 1 J. H. Cox, Section 7-19-5, 12 miles southeast of Homer.

De Soto Parish

Fortuna Oil Co. is drilling at 1,285 feet in No. 1 Alexandria, Section 32-12-15, 5 miles east of Logansport.

Gulf Refining Co. has started drilling Willie Williams C-18, Section 31-13-11, in the old Naborton disrtict.

L. V. Ulrey has 100 feet of oil in the hole in No. 1 Patterson-Robinson, Section 22-11-12, and is building standard rig to pump. It is in the old Pelican district, in the south end of the parish.

Grant Parish

The Finn Construction Co. is arranging to test at 1,100 feet in No. 3 Ball, Section 14-7-1w, in the Colfax district, north of Alexandria.

Jackson Parish

Big Chief Oil Co. is drilling at 800 feet in No. 1 J. H. Rhymes, Section 13-14-4w, 18 miles north of Winnfield.

Lincoln Parish

Gulf Refining Co. is drilling at 1,960 feet in No. 1 Dndley, Section 4-18-4w, 2 miles north and a little east of Ruston.

Ruston Drilling Co. set 10½-inch casing at 50 feet in No. 1 Richardson, Section 7-18-2w, 9 miles northwest of Ruston.

Morehouse Parish

Natural Gas Producing Co. set 6-inch casing at 2,287 feet in No. 16 Crossett, Section 15-22-5.

Natchitoches Parish

R. O. Roy is drilling at 2,400 feet in No. 1 C. M. Durr, Section 27-10-10, 10 miles south of the Bull Bayou district.

Sabine Parish

L. M. Emlet is drilling at 1,725 feet in No. 1 Bowman, Section 8-7-12, and bailing at 2,633 feet in No. 5, Section 9-7-12. Flo-La Oil Co. is arranging to test 27 feet of broken formation at 2,332 feet in No. 1 E. A. Walker, Section 8-7-12.

Union Parish

Roxana Petroleum Corp. is drilling in shale at 1,920 feet in No. 1 Henderson-Bennett, Section 13-22-3w, 15 miles northwest of Farmerville, and 8 miles south of the State line.

Ruston Drilling Co. is drilling at 1,000 feet in No. 1 James Miller, Section 7-20-4e, on the north edge of the Monroe gas field.

Thrift Oil & Gas Co. has a fishing job at 2,175 feet in No. 1 Smith-Russell, Section 12-20-4, 18 miles north of Monroe.

Arkansas Wildcats

Calhoun County.

Murdock and others have derrick up for a test to be drilled on the Eagle Lumber Co. lease in Section 29-12-13, 9 miles northeast of Camden.

Columbia County

Arkansas Fuel Oil Co. tested salt water at 695 feet in No. 2 Hardy, Section 1-19-22, and the well has been abandoned. The test was 10 miles southwest of Magnolia and 8 miles northwest of the Haynesville Field.

Transcontinental Oil Co. got a good showing of oil at 2,182 feet in No. 1 McClurkin, Section 6-16-19, and standard rig is being built to pump. It is on the south edge of the Stephens Field.

Virgil Heath, trustee, is drilling at 2,690 feet in No. 1 Williams, Section 1-18-21, 10 miles south of Magnolia.

Wingfield & Mitchell are reaming to bottom of hole at 2,024 feet in No. 1 Bodcau, Section 4-20-21, 16 miles south of Magnolia.

Drew County

McClintock & Goodka are riggnig up to drill No. 1 Ogle, Section 35-13-5, 12 miles southeast of Monticello.

Hempstead County

J. G. Wooten is drilling in lime at 1,800 feet in No. 1 Clarke, Section 22-11-24, 10 miles west of Prescott.

LaFayette County

Estes and others are rigging up to drill No. 1 Bodcau in Section 13-18-24, 10 miles south of Lewisville, and Humble Oil & Refining Co. has a fishing job at 1,450 feet in No. 1 Bodcau-Riggins, Section 21-15-22, 10 miles northeast of Lewisville.

Little River County

Grote and others, who had drilled to 3,600 feet in No. 1 Allen, Section 2-13-31, will plug back to 2,900 feet nad set 6-inch casing for a test.

Nevada County

Steele and others have derrick up for No. 1 Wallace in Section 11-14-21, in the Nevada district.

KENTUCKY PRODUCTION FOR MONTH OF MARCH

By T. S. Scott

Secretary Kentucky Oil Men's Assn.

Production of crude petroleum in Kentucky during March was as follows:

Allen	27,477.70
Barren	12,187.54
Bath	1,416.72
Boyd	146.31
Clinton	519.32
Cumberland	5,970.47
Elliott	807.72
Estill	38,084.80
Floyd	282.59
Hancock	3,196.70
Hopkins	1,142.36
Jackson	74.60
Johnson	91,600.20
Knott	206.84
Lawrence	55,023.11
Lee	162,108.05
Magoffin	80,885.16
McCreary	447.65
Monroe	775.39
Morgan	540.90
Ohio	9,517.75
Owsley	1,595.88
Powell	20,071.60
Simpson	1,160.01
Warren	48,251.63
Wayne	12,067.40
Wolfe	5,144.10

"GASOLINE CRUDE" OUTPUT IS DECLINING

(Continued from Page 22)

cline of 37,298 bbls. a day from last year's average.

The Midway-Sunset, Elk Hills, Coyote, Montebello and Inglewood fields in California are given a place among the gasoline crudes in this compilation, although their gasoline producing qualities are not in the same class with that of Santa Fe Springs, Rosecrans-Athens, Domingues, Long Beach and Huntington Beach. Santa Fe Springs produces crude of 33.5 degrees gravity, Domingues, 31.5 gravity and Rosecrans-Athens 38 or 39 gravity, and while Long Beach, Huntington Beach and others do not grade so high they yield about 20 per cent gasoline in a straight refinery run and for that reason are carried among the light oils in the production graph on the inside title page of The Oil and Gas Journal.

If we exclude Midway Sunset, Elk Hills, Coyote, Montebello and Inglewood from calculation among the gasoline crudes, it would lessen the total decline in the production of such crudes by 22,233 bbls. and add a like amount to the increase in the production of crudes altogether out of the gasoline category.

The fields above named were producing on May 1, 198,500 bbls. as against 176,267 bbls. a day as an average for last year. The average gasoline recovery from these crudes runs about 12 per cent.

Decline of Notable Fields

The production of Wortham, Texas, which opened in the closing days of last year and was only credited with an average of 2,499 bbls. a day for 1924; and the production of fields like Cromwell and Papoose in Oklahoma; Dominguez and Rosecrans-Athens in California; Reagan County, Texas and Cowley County, Kansas, are, in the main, responsible for any increases in high grade oil output but all of these with the exception of Reagan County, Texas, are now on the decline. The big falling off in the production of notable fields like Salt Creek, Wyoming; Burbank, Oklahoma; Powell, Texas; Mexia, Texas; Bristow, Oklahoma; Osage County, outside of the Burbank Field, Oklahoma; Long Beach and Santa Fe Springs, California, together with slight declines in many other fields brought about the net decline in production and caused the increases in crude prices, and are today maintaining those prices.

Big buyers of crude in the Mid-Continent were a unit in declaring the crude structure sound on May 1. If there was any cloud in the sky they had not seen it. They declared that the immense production of Smackover heavy gravity crude had been fully considered and was not regarded as a menace to the general crude market structure. The production of light oil since the Wortham peak was reached in January has been falling in a year when the consumption of gasoline will be the greatest in history. There is only one light oil field that could be speedily developed into a large producer of crude, that being Reagan County, Texas, where limited shipping facilities will, for a time at least, keep down the production, and there is not the same eagerness to engage in wildcatting operations as in years past because of the greatly increased cost of drilling and the lessened number of favorable structures on which to risk money.

The present day flood of low gravity crude is not the first in the history of the industry. Up to the discovery of oil at Spindletop, Texas, practically all the oil produced east of California came from the high grade oil producing States east of the Mississippi River. Following Spindletop came the development of the Gulf Coast fields, all of the low gravity oil, which caused a readjustment of petroleum economics and refining practices. Then came the discovery of one after another of big producing fields of high grade crude culminating in the tremendous flood of 1923 when in August we had a total production of "gasoline crude" approximating 1,940,000 bbls., or 341,000 bbls. a day in excess of the production of the same grades of crude on May 1 of this year. The average daily production of the United States in August, 1923, was 2,215,752 bbls., and of this only about 276,000 bbls. was of heavy gravity oils not suitable for the manufacture of gasoline by straight run refining. This 276,000 bbls. compared with the 551,673 bbls. a day of the same grades of oil on May 1 of this year indicates how the pendulum has swung around to the heavy oils.

NORTH CENTRAL TEXAS

(Continued from Page 32)

at 2,742 feet; Clark and others' No. 1 Combs & Worley has a show of oil at 2,500 feet; Wilcox and others' No. 1 Combs and Worley, setting casing at 2,342 feet.

Wheeler County—Shedden and others' No. 1 Westmoreland, drilling at 1,100 feet; Whittington and others' No. 3 Williams and Laycock, drilling in lime at 2,174 feet; No. 4 Williams and Laycock, rig burned down. No. 1 Porter, spudding at 150 feet; Texhoma Oil & Refining Co.'s No. 1-A Jackson, drilling in shale at 1,300 feet; Vaughan and others' No. 1 Krey, underreaming.

Throckmorton County—Domestic Oil Co.'s No. 1 Gober, drilling at 300 feet; Flowers Brothers' No. 1 Travis County school lands, drilling at 790 feet; Gwyn and others' No. 1 Portwood, drilling at 1,000 feet; Humble Oil & Refining Co.'s No. 1 King, 1,140 feet; McCosland and others No. 1 Rogers, 1,560 feet; Schimmel and others' No. 1 Kelly, 1,420 feet; Sheldon and others' No. 1 Whittaker, 970 feet.

Kent County—Greenwood and others' No. 1 Kuteman is drilling at 900 feet.

Shackelford County — Eastland Oil Co.'s No. 1 Jeter is drilling at 800 feet; Hope Petroleum Co.'s No. 10 Jeter, 1,200 feet; No. 1 Moberly, 920 feet; No. 1 Reynolds, 720 feet; Landreth Production Co.'s No. 1 Moberly, gassing at 812 feet; Phillips Petroleum Co.'s No. 1 Compton, drilling at 1,900 feet; No. 12 Poindexter, 3,425 feet; Tannehill and others' No. 12 Moberly, 520 feet.

Palo Pinto County — Burton and others' No. 4 Strawn Coal Co., underreaming; Dalton and others' No. 1 Perkins, drilling at 1,335 feet; Hart and others' No. 1 Cardwell, 1,950 feet; Hart Oil Corp.'s No. 1 Orme, 1,320 feet; Little Caddo Syndicate's No. 2 Massie, 1,850 feet; Pender Production Co.'s No. 1 Rosmussen, 1,630 feet.

Callahan County—Prewitt and others' No. 1 Linnecum, drilling at 1,690 feet; No. 2 Windham, 764 feet; Seaboard Oil & Gas Co.'s No. 3-A Isenhower, 1,470 feet.

Mitchell County—Eastland Oil Co.'s No. 1 Clark, drilling at 2,800 feet; No. 3 Keynard, 2,816 feet; Sloan and others' No. 1 Scott, 1,600 feet; No. 6 Smart, 1,550 feet; No. 7 Smart, 1,675 feet; California Co.'s No. 1 Elder Lease 1, 2,700 feet; No. 3 Elder Lease 2, 760 feet; No. 3 Elder Lease 2, 990 feet; Thompson and others' No. 1 Adams, 2,800 feet; West Texas Petroleum Co.'s No. 4 Miller, 2,000 feet.

Sterling County—Co-Operative Lease & Development Co.'s No. 1 Douthit, cleaning out at 2,000 feet; Chicago Texas Oil & Gas Co.'s No. 1 Durham, drilling at 1,850 feet; Pettit and others' No. 1 Reynolds, 510 feet.

Coke County, Weidler Oil Co.'s No. 1 Mims is drilling at 2,800 feet.

Coleman County—Canyon Oil & Gas Co.'s No. 1 Morris is drilling at 992 feet.

Upton County — Regan and others' No. 1 University is drilling at 1,100 feet; Campbell and others' No. 1 University, 545 feet.

Pecos County—Plymouth Oil Co.'s No. 1 Perry is drilling at 2,785 feet.

NEW FORM OF LEASE ON RESTRICTED LAND

(Continued from Page 32)

been held in one jurisdiction that a granting clause of the character appearing in the old form, passes title to the oil and gas in place.

"The old lease covers oil and gas and the new lease employs the term, "oil, gas and casinghead gas."

The old lease provides for the payment of $300 annually upon the completion of producing gas wells; and the new lease provides a royalty of 12½ per cent with certain modifications when the gas is unfit for domestic consumption. The royalty on casinghead gas is placed at 12½ per cent.

The new lease provides for the payment of all rentals and royalties to "the officer in charge for the lessor" where the old lease provided for payment of rentals and royalties to the "Secretary of the Interior."

Important Changes

An important change is contained in Paragraph 4 of the new lease which reads: "To have and to hold said land for all purposes herein set forth unto lessee for the term of 10 years from and after the date of approval hereof by the Secretary of the Interior and as much longer thereafter as oil, gas, casinghead gas or any one of them is produced in paying quantities from said land by lessee, or the gas royalties for wells capable of producing gas in paying quantities **but not utilized are paid,** as provided in Paragraph 4 hereof, **or as much longer thereafter as the lessee is engaged in completing a well commenced during the 10-year period, etc."**

The advance royalty rate is not changed in the new lease, and is still 15 cents per acre for the first and second years, 30 cents per acre for the third and fourth years, 75 cents per acre for the fifth year, and $1 per acre after that.

The wording of the clause pertaining to drilling within one year, is changed and in the new lease reads "Lesee shall **COMMENCE** the drilling of a well within one year" where the old lease read, "And shall **DRILL** at least one well within one year."

In most of the oil producing States of the nation the courts have held that there are two implied obligations resting upon an oil and gas lessee: the first is an implied obligation to offset promptly all paying wells on adjoining leases which are draining the leased premises: the second implied obligation requires a lessee to continue to drill wells after production is found as long as the results justify the necessary development. In the old form of departmental leases the first obligation is not implied but is covered by express stipulation which reads "The lessee may be required by the Secretary of the Interior or by such officer as may be designated by him for the purpose, to drill and operate wells to offset wells on adjoining tracts, and within 300 feet of the dividing line." The natural attitude of the lessee is to drill wells as long as the prospects of the roperty warrant it and the new lease differs from the old in this clause which reads, "The Secretary of the Interior may require lessee to drill wells to offset all paying wells, etc., etc.—**It is specifically agreed that during the life of this lease, lessee' drilling obligations hereunder shall be determined and limited by the express provision of this instrument and no other."**

Removal of Restrictions

In the matter of removal of restrictions the lessee is given splendid protection in the new lease which reads, "Should the Secretary of the Interior at any time during the life of this instrument relinquish supervision hereof as to all or part of the acreage covered hereby, such relinquishment shall not bind lessee until lessor shall have given lessee 30 days' written notice of such relinquishment accompanied by a certificate of the officer in charge officially evidencing such relinquishment."

The new lease is being well received by the oil industry as from the operators standpoint a uniform lease is almost indispensable, and the interests of the lessees have been greatly promoted by the tendency towards uniformity.

WILDCATTER IS ACTIVE IN TEXAS; SPENDING $4,000,000 IN SEARCH

By P. L. McGreal

HOUSTON, Tex., May 4.—The latest data available show the wildcatter is active in Texas. A check-up of operations outside of the proven fields gives 258 wildcat wells drilling and 102 rigs (derricks up). The term "rig" carries a different meaning in territory where the rotary method of drilling is used than it does in the cable tool section of the State. The wildcat operations covers 95 counties. The total includes 3 wells drilling and 8 rigs in the Coast region of Louisiana.

The operations of the wildcatter are divided as follows:

District—	No. Counties	Rigs	Drg.
North Central Texas	29	19	89
East Central Texas	17	6	37
Southwest Texas	25	26	64
Gulf Coast	24	43	65
South Louisiana	..	8	3
Total	95	102	258

The depths of the drilling tests range from a few hundred feet to 5,500 feet, the deepest being drilled by the United North & South Co. on the Kelly lease in Caldwell County. The cost will range from $3,500 for a shallow test to from $30,000 to $50,000 in the deep sands of the Coastal area. However, but few of these deep tests are being drilled in wildcat territory, so that $10,000 would be a fair average being expended for each test. Thus it will be seen that the oil industry is spending nearly $3,000,000 in its search for new production and preparing to spend over $1,000,000 more.

This vast sum is being expended by legitimate oil companies. The Federal Government rid Texas of its fake promotors. Some have been sent to Federal prisons at Leavenworth, Kans., and Atlanta and others paid heavy fines, with a caution that the next offense would mean imprisonment.

The State officials and the citizenship generally have adopted a more friendly attitude toward the oil industry and those engaged in it. Both realize that oil operators are spending millions annually and that a hostile attitude will kill the goose that lays the golden eggs. A few years ago this was not the case. Large oil corporations were ousted from the State and anti-trust legislation written into the laws.

One hundred and sixty-three corporations, companies and individuals are engaged in drilling these wildcat wells or preparing to start drilling, approximately 35 per cent of them being from the Mid-Continent Fields, or Oklahoma and Kansas. Every oil producing State is represented among the balance.

Geology plays a very prominent part in the operations in North Central and East Central Texas and in the southwest counties and 85 per cent of the drilling tests are in territory that has been geologized and considered worth expending money on. The result is that faults and folds and the technical names for formations have become almost common usage among operators and well workers, although not always correctly used. The Gulf Coast region is a saline dome proposition and but few northern operators venture a hazard in drilling there.

These wildcat tests extend from the Panhandle south to the Rio Grande and along the region drained by the Red River east, cutting into the central part of the State and on south to the Gulf of Mexico. Notwithstanding the extensive area of Texas, the searchers for petroleum are covering it pretty thoroughly, being especially active in the north central, northern and southwestern counties.

Oil Securities More Active and Strong

Wall Street Understands that Despite Increase in Production Output of Light Oil is Declining, Making for Better Earnings

By N. O. Finning
Room 543, No. 30 Church St., New York

NEW YORK, May 4.—Oil securities were more active and strong during the past week in the face of recent heavy increases in crude production. Evidently Wall Street understands the fact that overproduction is confined to heavy grade oil and will not have an unfavorable effect on oil company earnings because the scarcity of light oil will make for higher gasoline prices.

Jersey Report Anticipated

The annual statment of the Standard Oil Co. of New Jersey for 1924 will be issued shortly. Many estimates have been made as to what the net earnings will be, and it is likely none is founded on more than speculation. The estimate which seems to have been given most credit in the financial district places net at $80,000,000, or equivalent to about $4 per share on the common stock.

The basis for estimates of earnings considerably above those of 1923, which amounted to about $46,000,000, is the report on operations published recently in "The Lamp" which showed, in the first place, that the parent company's domestic and export sales were considerably larger than those for 1923, secondly that the subsidiaries were doing unusually well.

Incidentally, the Humble Oil & Refining made an unusually favorable annual statment for 1924, and the Imperial Oil, Ltd., and International Petroleum Co., Ltd., both had record years.

New Deals Anticipated

Many mergers are expected to follow the Standard of Indiana-Pan American deal. One spoken of as a possibility has to do with California companies—namely, Pan American Western, California Petroleum and General Petroleum.

Standard of California

Standard Oil Co. of California for the year ended December 31, 1924, reports net profit of $26,601,513 after interest, depreciation, depletion and Federal taxes, equivalent to $2.82 per share (par $25) earned on $235,228,446 outstanding capital stock. This compares with $24,442,439, or $2.62 per share, on $232,702,231 outstanding stock in 1923.

The consolidated income account for 1924 compares with 1923 as follows:

	1924	1923
Net earnings	$44,354,798	$38,330,936
Depreciation and depletion	13,535,368	11,756,830
Interest	1,197,917	1,541,667
Federal taxes	3,020,000	590,000
Net profits	$26,601,513	$24,442,439
Dividends	18,720,029	18,016,273
Surplus	$7,881,484	$6,426,166
P. & L. Surplus	73,366,607	63,722,990

The consolidated balance sheet of the Standard Oil Co. of California, as of December 31, 1924, compares as follows:

Assets

	1924	1923
Plant	$211,640,353	$209,534,978
Securities	29,506,225	33,246,077
Inventories	71,193,533	62,898,360
Deferred charges	2,153,952	2,359,065
Notes and accounts receivable	20,228,994	21,437,800
Cash	18,081,814	12,508,315
Total	$352,804,871	$341,984,595

Liabilities

Capital stock	$235,228,447	$232,704,321
Notes	22,500,000	25,000,000
Accounts payable	9,074,480	10,245,295
Federal tax reserve	8,670,987	6,240,986
Accrued interest	468,750	520,833
Insurance reserve	1,539,868	960,207
Merchandise due	233,317	867,608
Suspended earnings	1,722,355	1,722,355
P. & L. surplus	73,366,667	63,722,990
Total	$352,804,871	$341,984,596

Texas Pacific Coal & Oil

Texas Pacific Coal & Oil Co. reports for the quarter ended March 31, 1925, net income of $493,126 after expenses and charges but before depreciation and depletion, against $581,674 in the first quarter of 1924.

The income account of the Texas Pacific Coal & Oil Co. for the first quarter of 1925 follows:

Gross income	$1,313,799
Expenses	823,448
Operating profit	$ 490,351
Other income	44,190
Total income	$ 534,541
Deductions	41,415
Net income*	$ 493,126

*Before depreciation and depletion.

Louisiana Oil Refining

The balance sheet of the Louisiana Oil Refining Corp., as of December 31, 1924, shows total assets of $21,291,062. The consolidated balance sheet follows:

Assets: Cash $1,741,958; accounts receivable, $500,014; accrued interest and notes receivable, $42,837; inventories, $1,104,498; leases, equipment, warehouse supplies, etc., less depreciation and depletion, $17,568,448; sinking fund, $27,794; investments, $88,000; bond discount, $137,667; prepaid expenses, $79,846; total $21,291,062.

Liabilities: Accounts payable, $509,694; notes payable, $345,056; accrued accounts, $151,793; notes payable under special agreement, $64,000; Invincible Oil Corp. liquidation account, $10,347; funded debt, $4,128,438; reserves for contingencies, etc., $254,175; capital stock, $4,289,095; unearned appreciation, $6,805,022; profit and loss surplus, $4,733,442; total, $21,291,062.

Salt Creek Consolidated

The balance sheet of the Salt Creek Consolidated Oil Co. of Wyoming as of December 31, 1924, shows surplus of $4,337,763. The annual report states $1,600,000 was spent in 1924 on the development and operation, completing of 59 wells in addition to joint operation expenses.

Current earnings are at the rate of $1,000,000 quarterly. Current assets include $2,007,501 cash, $23,750 notes receivable, $116,282 accounts receivable and $97,353 of bonds.

Ohio Fuel Oil Co.

Ohio Fuel Oil Co. for year ended December 31, 1924, shows net profit of $176,575 after expenses and depreciation, equivalent to 55 cents a share (par $1) earned on 320,000 shares of outstanding capital stock, as compared with $264,464 or 82 cents a share in 1923.

Cities Service Co.

At the annual meeting of Cities Service Co., stockholders voted to change the par value of the company's common capital stock from $100 to $20 a share. Each outstanding share of the common capital stock of a par value of $100, under the plan recommended by the board of directors and adopted by the stockholders, is exchangeable for five shares of common capital stock of $20 par value.

NEW YORK STOCK EXCHANGE—LIST OF ACTIVE STOCKS

Stocks—	Par	$Dividends Rate	Closing Quot. May 4	Apr. 27	1925— High	Low	1924— High	Low	1923— High	Low
American Republics	..	..	*53	*51	66¼	48	48	25	..	..
Associated Oil	25	6	35⅞	35	39½	32	34⅝	27⅝	29¼	29½
Atlantic Ref. com.	100	..	105¼	101⅞	117½	95½	140½	78½	160	98¾
Barnsdall "A"	25	..	22¾	*22	28¾	21	22¼	14	37	9⅞
California Pet. com.	25	†	30	29	32⅞	23⅞	29	19⅞	28½	17½
General Am. Tank	..	†3	*45⅝	45⅝	58½	45	53	35½	71⅝	40
General Petroleum	25	8	52⅛	50⅜	57½	42	45	38⅝	..	..
Houston Oil	100	..	61½	59¾	85	60⅝	82½	61	78	40¾
Independent Oil & Gas	..	†1	26¼	24½	33½	13½	16¼	6⅝	11¼	3⅜
Indian Refining	10	..	*8½	7⅜	10⅝	5½	7	3⅞	8½	4
Louisiana Oil	50	..	17⅜	17	23¾	14⅝				
Maracaibo	..	..	27	26¼	35½	25½	37½	25⅜	28¼	16
Marland	..	..	39	36⅛	46¼	32⅝	42	29	59⅝	18½
Mexican Seaboard	..	..	17	16½	22½	11½	25⅜	14⅛	19¾	5¾
Mid-Continent Pet.	..	..	28⅜	27½	35⅝	26⅛	40¼	22⅝	62½	23⅜
National Supply	50	6	63½	*63⅜	71	61⅜	72½	54	68	54
Pacific Oil	50	†2	57⅜	55½	65¼	52¼	58¼	45	52⅛	31½
Pan American com.	20	12	76⅝	72½	82⅜	65	65	44½	93½	53
Phillips Petroleum	..	†2	40	39	46⅝	36⅛	42¼	28½	69⅝	19¾
Producers & Refiners	50	..	23½	23	32⅝	22	43½	29⅜	58⅛	17½
Pure Oil com.	..	6	27	26	33¾	25½	30½	20	32	16¼
Royal Dutch, N. Y. sh.	13.40	4.42½	49½	49	57⅜	48¾	59½	40⅝	55⅛	40½
Shell Transport	3.30	*40½	40½	40½	46¾	41	42	33	41¼	29½
Shell Union com.	10	†1	24⅝	23½	28⅝	22½	22½	16⅜	19¼	12⅝
Simms Petroleum	10	..	23½	22½	26⅜	19½	24	10⅜	16¾	6¼
Sinclair Consolidated com.	..	..	19½	18½	24⅞	17	27½	15	39⅝	16
Skelly Oil	25	..	25	23¼	30½	21⅝	29	17½	35	12½
Standard of California	25	8	58⅝	58½	67½	56⅝	68½	55½	64½	47½
Standard of N. J. com.	25	4	42½	41⅝	47½	38⅝	42¼	33	44½	30⅝
Superior Oil	6	..	4	4	6¼	4	8¼	2⅝	6⅜	2
The Texas Co.	25	12	44⅞	43½	49	42⅝	45⅝	37⅜	52⅞	34⅝
Texas Pacific Coal & Oil	10	..	15¼	14⅝	23⅜	11½	15¼	8½	24⅜	5½
Tide Water Oil	100	4	138⅝	133	152	122	151	116¼	144	94
Transcontinental	..	..	4	4	5½	3⅞	6¼	3¾	14½	1¼
Union Oil of California	25	7.2	37⅛	36½	43⅜	36¼	39	35½	..	..
Union Tank com.	100	5	122½	122	127⅜	118½	132⅞	94	114	106
White Eagle Oil & Ref.	..	2¼	26½	*26	31⅝	25⅝	29⅝	23½	30⅝	20½
Standard Oil Stocks										
Anglo-American Oil	£1	25	24⅞	25¼	26¼	18	18⅜	14⅜	19⅜	13½
Borne Scrymser	100	12	205	*202	240	212	264	150	153	110
Buckeye Pipe Line	50	14	59	*61	72	60½	85½	51	94	57½
Chesebrough Mfg. Co.	25	14	64⅞	*68	70	48¼	52½	29¼	340	205
Crescent Pipe Line	25	..	11	11	15⅝	11	20	11¼	25	15
Cumberland Pipe Line	100	12	145	145⅞	150	128	148	109	117	80
Eureka Pipe Line	100	8	78	*77	96	80	105	74	117½	87
Galena Signal com.	100	4	54	*54	68½	55	69⅜	52⅛	78	55
Humble Oil & Refining	25	4.8	49⅝	46⅞	47⅜	42¼	43⅝	36	41	28½
Illinois Pipe Line	100	12	143	145	154½	127	161	123	171	115
Imperial Oil, Ltd.	..	†2	30	29½	34⅛	27⅜	119	99	123	92
Indiana Pipe Line	50	8	71	71	84	70	100	66	103	81
International Pet. Co.	100	x50	24½	24¼	28⅝	22½	24⅜	16⅜	24⅜	13¼
Magnolia Petroleum Co.	100	4.5	135½	*130½	159	131½	162	124	166	123
National Transit	12.50	16	22	22	25½	22½	25⅞	20⅝	29	19½
New York Transit	100	3	*62	*64	79	64¼	97	54½	138	70
Northern Pipe Line	100	6	82½	*83	88	80	107½	72	111	96
Ohio Oil Co.	25	8	64¼	64	75⅛	62½	79½	53	85⅝	48⅝
Pen.-Mex. Fuel	25	..	36	*35	44	35⅝	46⅝	27	45	10½
Prairie Oil & Gas	25	†2	55	54⅝	65½	50¼	269	193	272	152
Prairie Pipe Line	100	8	121	116½	126	106	111	100	117	93
Solar Refining Co.	100	15	217	*213	269	200	240	170	212	161
South Penn Oil	100	..	168	165	197	139	176	117	196	100
South West Pa. Line	100	6	*67	*67	84	65	89	68	89	66
Southern Pipe Line	100	4	82	*82½	103	81⅛	100	80½	116	87
Standard of Indiana	25	10	63⅞	62¼	70	59½	69⅜	54¼	69¾	48½
Standard of Kansas	25	..	31¼	31⅛	46	31	50⅛	32⅝	56¼	36⅛
Standard of Kentucky	25	16	118½	118	124½	114⅝	121⅛	101	109½	76
Standard of Nebraska	100	20	241	*243	270	244	262	198	280	186
Standard of New York	25	6.6	43½	42	48⅝	41⅛	48	37⅝	49¾	35½
Standard of Ohio com.	100	10	*347	*345	369	338	337½	277	320	270
Swan & Finch com.	25	..	*17	*17	27	16	28	20	..	..
Vacuum Oil	25	†3.75	87	85	96¼	80⅜	83¼	56½	55½	40
Washington Oil	10	..	*30	*30½	30½	30	29	26	28	20½
Miscellaneous Stocks										
Cities Service bks. sh.	$	..	17⅜	17⅝	21	17	19	13¼	18½	12¾
Continental	10	10	25⅛	23⅝	31⅛	21⅝	..	..	..	..
Gulf Oil Corp. of Pa.	25	6	64⅝	64	71	63½	67⅜	56	68¼	46⅝

*Bid, no sales. †In dollars. ‡Six per cent cash and 6 per cent scrip annually. §The figures in this column are kept up to date as far as possible, but are not guaranteed. xCents per share.

The Oil and Gas Journal's weekly average price of 20 representative petroleum stocks listed on the New York Stock Exchange was as follows:

May 4	54.33	Mar. 30	51.28	Feb. 23	58.02
Apr. 27	52.70	Mar. 23	52.90	Feb. 16	55.96
Apr. 20	52.96	Mar. 16	54.14	Feb. 9	58.39
Apr. 13	53.49	Mar. 9	57.73	Feb. 2	59.24
Apr. 6	54.63	Mar. 2	59.56	Jan. 26	56.09

CONTRACTS ARE CLOSED FOR CRACKING UNITS

NEW YORK, May 4. — The M. W. Kellogg Co. has closed contracts for the installation of 17 Cross cracking units to be installed immediately. Ten units will be installed at the Beaumont, Tex., plant of the Magnolia Petroleum Co., four at the Brooklyn, N. Y., plant of the Standard Oil Co. of New York, one at the Olean, N. Y., plant of the Vacuum Oil Co. and two at the Barnsdall, Okla., plant of the Barnsdall Refining Co.

Each of these units will have a capacity of 1,000 bbls. each, will be equipped with bubble towers. Patent rights for the Cross process are held by the Gasoline Products Co., of Kansas City, Mo. The M. W. Kellogg Co. sold the units and will install them.

OKLAHOMA GASOLINE SALE

OKLAHOMA CITY, Okla., May 4.—About 150,000,000 gallons of gasoline and 32,000,000 gallons of kerosene were inspected in Oklahoma last year, according to reports in the State Oil and Gas Conservation Bureau. Inspections in March of this year totaled 12,658,510 gallons of gasoline and 2,483,687 gallons of kerosene; an increase of 4,320,000 gallons of gasoline over March, 1924. February gasoline inspections this year totaled 8,334,809 gallons, an increase of 5,000,000 gallons over February, 1924. More than 500,000 gallons more kerosene were inspected in February of this year than in March.

SUPERIOR OIL DIRECTORS

James P. Magill of Philadelphia, and Harman Yerkes of Doylestown, Pa., were elected directors of Superior Oil Corp., at annual stockholders' meeting in Wilmington, Del., succeeding E. J. Henry and Albert Hill. Other directors were reelected.

Statistics of Crude Petroleum for March, 1925

(Preliminary data, subject to revision, based on reports received up to April 27, issued by the Department of the Interior, through the Geological Survey.)

During March daily average production of petroleum in the United States (amounting to 1,939,677 bbls.) increased 9,498 bbls. as contrasted with that of February. Considerable increased production in Arkansas and Texas was in part offset by decreased output in Oklahoma and California. Notwithstanding the gains in total production, the output of light oil—lighter than 24 degrees (0.910)—decreased during the month approximately 20,000 bbls. daily. Pipe line and tank farm stocks, which on March 31 were 348,157,000 bbls., decreased 202,000 bbls., an increase of 953,000 bbls. in California being more than counterbalanced by a decrease in stocks east of California. Stocks of crude oil at refineries, according to tentative figures, on March 31 were 43,500,000 bbls.—a decrease of 170,000 bbls.

For the first quarter of 1925 production of petroleum in the United States (amounting to 173,694,000 bbls.) increased more than 2,000,000 bbls. as contrasted with that for first quarter of 1924. The output of the Mid-Continent Field increased 12,000,000 bbls., the chief gains being in Oklahoma, Texas and Kansas. Decreased output is reported in all the other major fields except the Appalachian, the greatest losses being in California and in the Rocky Mountain Field. Although imports of crude oil for the first quarter of 1925 (amounting to 18,980,000 bbls.) were 2,465,000 less than those for the corresponding period of 1924, imports from countries other than Mexico increased 1,205,000 bbls. Shipments from Venezuela are increasing. Consumption of crude petroleum during the first quarter of 1924 was approximately 14,000,000 bbls. greater than domestic production.

PRODUCTION

The figures given below for the States east of California, compiled from reports made to the Geological Survey by companies that operate gathering lines, are preliminary and show the quantity of petroleum transported from producing properties, which amounts to approximately 99 per cent of the total production. Petroleum consumed on the leases and produced but not transported from the producing properties is not included in the preliminary figures. These items are given in the final statistics, which show all the oil brought to the surface. Current figures for California are those reported by the Pacific Coast office of the American Petroleum Institute. Final figures for California are compiled by the California State Mining Bureau.

BY STATES

(Barrels of 42 U. S. Gallons)

State	February, 1925 a/ Total	February, 1925 a/ Daily Average	March, 1925 Total	March, 1925 Daily Average	Jan.-Mar. 1925	Jan.-Mar. 1924
Arkansas	2,739,000	97,821	3,668,000	118,323	9,444,000	9,206,000
California	16,870,000	602,494	18,626,000	600,839	54,239,000	60,167,000
Colorado	53,000	1,893	80,000	2,581	191,000	20,200
Illinois	603,000	21,536	728,000	23,484	1,993,000	2,012,000
Indiana:						
Southwestern	53,000	1,893	50,000	1,613	159,000	159,000
Northeastern	15,000	536	19,000	613	49,000	64,000
Total Indiana	68,000	2,429	69,000	2,226	208,000	223,000
Kansas	2,517,000	89,893	2,787,000	89,903	7,741,000	6,485,000
Kentucky	545,400	19,479	593,400	19,142	1,715,500	1,815,100
Louisiana:						
Gulf Coast	187,000	6,679	217,000	7,000	619,000	537,000
Rest of State	1,308,000	46,714	1,447,000	46,677	4,201,000	4,497,000
Total Louisiana	1,495,000	53,393	1,664,000	53,677	4,820,000	5,034,000
Montana	226,000	8,071	233,000	7,516	695,000	462,000
New Mexico	10,000	357	29,000	935	53,000	.....
New York	115,000	4,107	130,000	4,194	364,000	317,000
Ohio:						
Cent. & Eastern	389,000	13,893	434,000	14,000	1,229,000	1,124,000
Northwestern	150,000	5,357	165,000	5,322	466,000	481,000
Total Ohio	539,000	19,250	599,000	19,322	1,695,000	1,605,000
Oklahoma:						
Osage County	2,211,000	78,964	2,490,000	80,323	7,259,000	9,520,000
Rest of State	11,711,000	418,257	12,235,000	394,677	36,363,000	27,555,000
Total Oklahoma	13,922,000	497,221	14,725,000	475,000	43,622,000	37,075,000
Pennsylvania	585,000	20,893	673,000	21,710	1,863,000	1,748,000
Tennessee	600	21	600	19	1,500	1,900
Texas:						
Gulf Coast	1,670,000	59,642	2,428,000	78,323	5,896,000	6,493,000
Rest of State	9,427,000	336,679	10,034,000	323,677	30,632,000	25,924,000
Total Texas	11,097,000	396,321	12,462,000	402,000	36,528,000	32,417,000
West Virginia	447,000	15,964	489,000	15,774	1,412,000	1,464,000
Wyoming:						
Salt Creek	1,664,000	59,429	1,925,000	62,097	5,372,000	9,460,000
Rest of State	549,000	19,607	649,000	20,935	1,737,000	2,125,800
Total Wyoming	2,213,000	79,036	2,574,000	83,032	7,109,000	11,585,800
Total	54,045,000	1,930,179	60,130,000	1,939,677	173,694,000	171,638,000

a/Revised.

BY FIELDS

(Barrels of 42 U. S. Gallons)

Field—	February, 1925 Total	February, 1925 Daily Average	March, 1925 Total	March, 1925 Daily Average	Jan.-Mar. 1925	Jan.-Mar. 1924
Appalachian	2,082,000	74,357	2,320,000	74,839	6,585,000	6,470,000
Lima-Indiana	165,000	5,893	184,000	5,935	515,000	545,000
Illinois-S. W. Ind.	656,000	23,429	778,000	25,097	2,152,000	2,171,000
Mid-Continent	29,913,000	1,068,328	32,661,000	1,053,580	95,640,000	83,187,000
Gulf Coast	1,857,000	66,321	2,645,000	85,323	6,515,000	7,030,000
Rocky Mountain	2,502,000	89,357	2,916,000	94,064	8,048,000	12,068,000
California	16,870,000	602,494	18,626,000	600,839	54,239,000	60,167,000
Total	54,045,000	1,930,179	60,130,000	1,939,677	173,694,000	171,638,000

STOCKS

Stocks of crude petroleum for statistical purposes are classified as follows:

1. Producers stocks: Petroleum held on the producing properties (lease or "field" storage). Producers' stocks are reported to the Geological Survey annually, as of December 31, and are included in the Survey's final statistics. Since 1919 producers' stocks east of California have ranged between 3,500,000 and 10,000,000 bbls.

2. Pipe line and tank farm stocks: Petroleum that has been transported from the producing properties but not delivered at refineries or at other points of consumption and is held on tank farms, in tanks along pipe lines, and in the lines. For the States east of California such stocks are reported monthly to the Geological Survey as gross stocks, including the total contents of tanks and pipe lines, and as net stocks, which are gross stocks minus sediment and water. The tocks reported for California are compiled by the Pacific Coast office of the American Petroleum Institute and include producers', pipe line, and tank farm stocks (but not refinery stocks) of crude oil, residuum, and tops.

3. Refinery and other consumers' stocks: Petroleum that has been delivered at refineries and other points of consumption. Stocks of crude petroleum held at refineries are compiled by the Bureau of Mines. Data concerning stocks held by other consumers are not available.

STOCKS OF CRUDE PETROLEUM ON LAST DAY OF MONTH (Barrels)

Pipe line and tank farm stocks: Domestic petroleum (reported by fields of origin, not by location of storage):

		February 28, 1925 a/	March 31, 1925	March 31, 1924
East of California:				
Appalachian:				
New York, Pennsylvania, West Virginia, Eastern and Central Ohio	Gross	7,352,000	7,266,000	6,530,000
	Net	7,111,000	7,051,000	6,267,000
Kentucky:	Gross	2,449,000	2,358,000	2,697,000
	Net	2,333,000	2,243,000	2,569,000
Lima-Indiana:	Gross:	1,407,000	1,364,000	1,235,000
	Net	1,190,000	1,151,000	999,000
Illinois-S. W. Indiana:	Gross	11,341,000	11,424,000	11,467,000
	Net	10,813,000	10,936,000	11,009,000
Mid-Continent:				
Oklahoma, Kansas, North Central, and West Texas:	Gross	184,772,000	183,968,000	178,769,000
	Net	173,510,000	172,404,000	168,216,000
North Louisiana and Arkansas:	Gross	35,230,000	34,755,000	35,131,000
	Net	33,147,000	32,699,000	32,681,000
Gulf Coast:	Gross	19,310,000	19,868,000	23,339,000
	Net	18,949,000	19,478,000	22,917,000
Rocky Mountain:	Gross	28,961,000	29,023,000	23,921,000
	Net	28,939,000	29,000,000	23,888,000
Total pipe line and tank farm stocks east of California:	Gross	290,822,000	290,026,000	283,089,000
	Net	275,992,000	274,962,000	268,536,000
California, (as stated above)		71,843,000	72,796,000	64,986,000
Foreign crude petroleum held in U. S. by importers elsewhere than at refineries				
At Atlantic Coast stations		204,000	220,000	175,000
At Gulf Coast stations		320,000	179,000	1,114,000
Total		524,000	399,000	1,289,000
Total domestic net pipe line and tank farm stocks east of California; California stocks, and foreign crude stocks (as stated above)		348,359,000	348,157,000	334,811,000
Refinery stocks (Bureau of Mines):				
Domestic crude Oil east of California		27,980,000	b27,370,000	28,266,000
Domestic crude oil, California		10,724,000	11,030,000	5,779,000
Foreign crude oil		4,966,000	b5,100,000	4,705,000
Total crude oil at refineries		43,670	b43,500,000	38,750,000
Total pipe line, tank farm and refinery stocks of crude petroleum		392,029,000	391,657,000	373,561,000

a/Revised. b/Tentative figures of Bureau of Mines.

INDICATED DAY'S SUPPLY OF PIPE LINE AND TANK FARM STOCKS OF CRUDE PETROLEUM

(Based on average daily rate of deliveries to domestic consumers and export)

February, 1925	March, 1925	March, 1924
165	162	159

IMPORTS AND EXPORTS OF CRUDE PETROLEUM (Barrels)

(From Bureau of oFreign and Domestic Commerce)

	February, 1925 Total	February, 1925 Daily Average	March, 1925 Total	March, 1925 Daily Average	Jan.-Mar. 1925	Jan.-Mar 1924
Imports:						
From Mexico	4,951,000	176,821	5,992,000	193,290	17,405,000	21,075,000
From other Countries	629,000	22,464.	383,000	12,355	1,575,000	370,000
Total	5,580,000	199,825	6,375,000	205,645	18,980,000	21,445,000
Exports						
Domestic crude oil						
To Canada	546,000	19,500	765,000	24,677	1,965,000	2,568,000
To other Countries	566,000	20,214	272,000	8,774	1,318,000	2,012,000
Foreign crude oil	10,000	357	20,000	645	45,000	11200.0
Total	1,122,000	40,071	1,057,000	34,096	3,328,000	4,692,000

INDICATED DELIVERIES OF CRUDE PETROLEUM TO DOMESTIC CONSUMERS

(Barrels)

(Production plus imports minus exports plus stocks, exclusive of consumer's stocks, at beginning of month minus stocks at end of month)

	February, 1925 a/ Total	February, 1925 a/ Daily Average	March, 1925 Total	March, 1925 Daily Average	Jan.-Mar. 1925	Jan.-Mar. 1924
Domestic petroleum, by fields of origin:						
Appalachian	1,970,000	70,357	2,470,000	79,677	6,580,000	6,854,000
Lima-Indiana	158,000	5,643	223,000	7,194	585,000	521,000
Ill. & S. W. Ind.	688,000	24,571	655,000	21,129	2,086,000	2,253,000
Mid-Continent	31,147,000	1,112,393	34,215,000	1,103,709	99,866,000	85,194,000
Gulf Coast	2,111,000	75,393	2,116,000	68,258	7,237,000	8,087,000
Rocky Mountain	2,349,000	83,893	2,855,000	92,097	7,723,000	7,884,000
California	15,137,000	540,607	17,673,000	570,097	50,316,000	57,343,000
Deliveries and exports	53,560,000	1,912,857	60,207,000	1,942,161	174,387,000	168,136,000
Deliveries	52,448,000	1,873,143	59,170,000	1,908,710	171,104,000	163,556,000
Foreign petroleum	5,639,000	201,393	6,480,000	209,032	19,247,000	21,427,000
Deliveries of domestic and foreign petroleum	58,087,000	2,074,536	65,650,000	2,117,742	190,351,000	184,983,000

a/Revised.

INDICATED DOMESTIC CONSUMPTION OF CRUDE PETROLEUM (BARRELS)

(Production plus imports minus exports plus stocks, including refinery stocks, at beginning of month minus stocks at end of month.)

State	February, 1925 Total	February, 1925 Daily Average	March, 1925 Total	March, 1925 Daily Average	Jan.-Mar. 1925	Jan.-Mar. 1924
Crude oil run to refinery stills a/	52,993,000	1,892,607	b/.....	.....	.....	153,619,000
Indicated consump. of crude pet. for fuel (including losses)	4,714,000	168,357	b/.....	.....	.....	25,873,000
Total	57,707,000	2,060,964	c65,820,000	2,123,226	187,846,000	179,492,000

/aBureau of Mines; b/Net yet available; c/refinery stocks used in calculation estimated in part.

NUMBER OF PRODUCING OIL WELLS COMPLETED a/

February, 1925	990
March, 1925	1,085
March, 1924	1,088

a/ For States east of California, from The Oil and Gas Journal; for California, from the American Petroleum Institute.

SHIPMENTS OF CALIFORNIA OIL THROUGH PANAMA CANAL TO EASTERN PORTS IN THE UNITED STATES

(From the Panama Canal Record)

(Compiled from declarations by masters of vessels reported in tons of 2,240 pounds.)

	Feb., 1925	Mar., 1925	Jan.-Mar., 1925	Jan.-Mar., 1924
Crude oil: Long tons	224,142	211,394	632,236	1,950,251
Barrels (approx.)	1,636,000	1,543,000	4,615,000	14,237,000
Refined products: Long tons	86,444	176,931	230,125	114,800

REFINING AND MARKETING

REFINERY EXTENSIONS IN COASTAL DISTRICT

HOUSTON, Tex., May 5.—The Deep-water Refining Co. of Houston has acquired the plant of the La Porte Oil Refining Co. at Morgan's Point and will use it for making its "New Process" lubricating grades. The plant has a charging capacity of 1,000 bbls., but has been idle for several months.

The Pure Oil refinery at Smith Bluff on the Neches River above Port Arthur will be increased from 10,000 to 15,000 bbls. daily capacity. The company will spend $1,000,000 in additions and improvements. B. G. Dawes, president of the Pure Oil Co., and other officials recently inspected the refinery, accompanied by W. P. Gage, president of the Pure Oil Pipe Line Co. The latter has completed laying long loops and installing additional units at pumping stations. The line now can handle 30,000 bbls. daily. It is an 8-inch line from the Mexia-Powell-Wortham Fields to Smith Bluff.

The Humble Pipe Line Co. is laying another 8-inch line from its tank farm at Webster to the refinery of the Humble Oil & Refining Co. at Baytown on the Houston ship channel, near the Goose Creek Pool. It will be used for light gravity crudes. The pipe line company has two 6-inch lines from the tank farm to Texas City, through which light and heavy gravity crudes are pumped to the ocean terminals to be loaded on tankers. Stocks of crude in steel tankage at Webster aggregate 1,450,000 bbls. and at Baytown 1,420,000 bbls.

The pipe line subsidiary of the Humble company has prepared for the influx of crude from the Big Lake Field in Reagan County by laying additional lines and loops between Hearne and Webster tank farm, so that it can handle 100,000 bbls. daily on the south end of its truck system. The lines from the Mexia-Powell-Wortham Fields tie into the main line from Comyn at Hearne. The 200 miles extension from Comyn to Big Lake is in operation and will handle about 20,000 bbls. daily. The line is running purchases of crude in Reagan County made by the Marland Oil Refining Co., which will be delivered at Texas City and Baytown.

Lines of the Magnolia Petroleum Co. have been increased to the south end by additional long loops so the company can deliver 100,000 bbls. daily to its refinery at Beaumont.

OHIO MARKETERS TO MEET

CINCINNATI, Ohio, May 5.—Extensive preparations are being made for the annual convention of the Ohio Petroleum Marketers Association to be held at Cincinnati Thursday and Friday, May 14 and 15. Discussions arising out of questions relative to the State gasoline sales tax law, passed recently over the Governor's veto, will feature the convention.

NEW MARKETING COMPANY

FREEPORT, Ill., May 5.—Incorporation papers have been issued for the Freeport Petroleum Corp., to do a general marketing and distributing business at Freeport. Edward J. Greb, James Pollock, Jr., and Arthur G. Stratton are organizers. Capital stock is $24,000.

REFINERY BUYS PIPE LINE

ROCKDALE, Tex., May 5.—Owens Refining Co. of Minerva has purchased the Southern Pipe Line Corp., of which Harry Landa of New Braunfels was president. The Owens company will take over contracts which the Southern Pipe Line Corp. had made for oil.

FEW TANK WAGON PRICE CHANGES ON MAY 1; AVERAGE ALMOST SAME

With only few changes to mark the month of April, the average tank wagon price of gasoline in 50 representative cities of the United States was virtually the same May 1 as April 1. On May 1 the average tank wagon price was 18.352 cents, while on April 1 it was 18.68 cents.

Exclusive of advances in tank wagon prices to cover new State gasoline taxes, the tank wagon price was changed in only 15 of the 50 cities. With one exception, the changes were reductions. At Little Rock, the only city to feel and advance, the Magnolia Petroleum Co. increased the tank wagon from 17 to 18 cents, exclusive of the tax.

Four States, Iowa, Ohio, Kansas and Minnesota, have inaugurated new taxes since the last report was made April 1. The two latter States began collecting 2-cent taxes May 1. Three States, Indiana, Nevada and South Dakota, increased their taxes. Despite the increase during the month in the number of States having gasoline taxes from 38 to 43, and the three increases in levies, the average gasoline tax in the 50 cities only increased from 2.42 to 2.46 cents. Six other States besides those mentioned inaugurated new taxes or increased old taxes April 1, but were included in The Oil and Gas Journal's report as of that date.

The following table shows the gasoline prices in effect May 1:

GASOLINE PRICES EFFECTIVE ON MAY 1, 1925

Table showing gasoline tank wagon prices as of May 1, 1925, exclusive of taxes in fifty representative cities, including the amount and date of changes since April 1, 1925. High and low prices and State taxes also given.

	April Changes			May 1	High and Low Prices 1924		1923		Taxes May 1
	1		20						1925
Birmingham, Ala.	20.0	....	....	19.0	19.0	20.0	13.0	20.0	14.0	2.0
Phoenix, Ariz.	20.0	....	....	....	20.0	20.0	16.0	22.5	17.5	3.0
Little Rock, Ark.	17.0	9 18.0	....	....	18.0	18.0	13.0	20.5	12.5	4.0
San Francisco, Cal.	15.0	....	....	....	15.0	15.0	11.0	19.0	12.0	2.0
Denver, Colo.	19.0	....	....	....	19.0	19.0	12.0	20.0	11.0	2.0
Hartford, Conn.	20.0	....	....	....	20.0	20.0	13.0	24.5	15.5	1.0
Dover, Del.	19.0	....	....	....	19.0	20.0	14.0	23.0	14.0	2.0
Jacksonville, Fla.	19.0	....	....	20 18.0	18.0	19.0	12.0	20.0	13.0	3.0
Atlanta, Ga.	21.0	....	....	20 20.0	20.0	19.0	11.0	22.0	13.0	3.0
Boise, Idaho	21.5	....	....	....	21.5	22.5	18.5	24.0	18.0	3.0
Peoria, Ill.	18.2	....	....	....	18.2	18.2	13.0	20.8	12.2	...
Chicago, Ill.	18.0	....	....	18 17.0	17.0	18.0	13.0	20.0	12.0	...
Indianapolis, Ind.	18.2	....	....	....	18.2	18.2	13.2	20.8	12.2	3.0
Des Moines, Iowa	18.5	....	....	....	18.5	18.5	13.5	21.1	12.5	2.0
Wichita, Kans.	17.8	....	....	....	17.8	17.8	12.8	20.4	11.8	2.0
Louisville, Ky.	19.0	....	....	20 18.0	18.0	19.0	12.0	21.0	13.0	3.0
New Orleans, La.	16.5	....	....	....	16.5	16.5	11.5	19.5	10.5	2.0
Augusta, Maine	20.0	....	....	....	20.0	19.0	13.0	24.5	15.5	1.0
Baltimore, Md.	18.0	7 17.0	....	....	17.0	19.0	13.0	22.5	15.0	2.0
Springfield, Mass.	20.0	....	....	....	20.0	20.0	13.0	24.5	14.5	...
Detroit, Mich.	18.8	....	....	....	18.8	18.8	13.8	21.8	13.2	2.0
Duluth, Minn.	19.5	....	....	....	19.5	19.2	14.5	21.5	12.9	2.0
Natchez, Miss.	18.5	....	....	20 17.5	17.5	18.5	11.5	20.0	12.5	3.0
Kansas City, Mo.	17.9	....	....	....	17.9	17.9	11.9	19.5	10.9	3.0
Helena, Mont.	23.0	....	....	....	23.0	23.0	18.0	23.5	18.0	2.0
Omaha, Neb.	16.0	....	....	....	16.0	18.25	11.0	20.5	12.25	2.0
Reno, Nev.	18.5	....	....	....	18.5	18.5	14.5	22.5	15.5	4.0
Newark, N. J.	18.0	7 17.0	....	....	17.0	19.5	13.5	23.5	15.5	...
Albuquerque, N. M.	23.5	....	....	....	23.5	23.0	18.0	25.5	17.0	3.0
New York, N. Y.	20.0	....	....	....	20.0	20.0	14.0	24.5	15.5	...
Charlotte, N. C.	19.0	7 18.0	....	....	18.0	19.0	12.0	21.5	15.0	4.0
Fargo, N. D.	19.9	....	....	....	19.5	19.6	14.9	24.3	13.6	1.0
Cleveland, Ohio	18.5	....	....	....	18.5	20.0	15.0	21.0	16.0	2.0
Tulsa, Okla.	16.5	8 15.5	....	....	15.5	18.0	9.5	20.0	8.0	3.0
Portland, Ore.	15.5	....	....	....	15.0	16.0	12.0	20.0	13.0	3.0
Philadelphia, Pa.	19.0	....	....	....	19.0	20.0	14.0	23.0	14.0	...
Providence, R. I.	20.0	....	....	....	20.0	20.0	13.0	24.5	15.5	...
Charleston, S. C.	19.0	7 18.5	....	....	18.5	19.0	13.5	22.0	15.0	5.0
Huron, S. D.	30.0	....	11 15.0	....	15.0	20.0	15.0	22.6	14.0	3.0
Memphis, Tenn.	16.0	....	....	....	16.0	18.0	12.0	20.0	12.0	3.0
Dallas, Texas	16.0	....	....	....	16.0	17.0	9.0	19.0	6.0	1.0
Salt Lake City, Utah	20.5	....	....	....	20.5	21.5	16.5	23.0	15.5	3.5
Burlington, Vt.	20.0	....	....	....	20.0	20.0	13.0	24.5	15.5	1.0
Norfolk, Va.	19.0	7 18.0	....	....	18.0	19.0	14.5	21.5	15.0	3.0
Washington, D. C.	18.0	7 17.0	....	....	17.0	19.0	14.0	23.0	15.0	2.0
Charleston, W. Va.	17.0	....	....	....	17.0	19.0	14.0	23.0	15.0	2.0
Milwaukee, Wis.	18.1	....	....	....	18.1	18.1	13.1	19.6	12.0	2.0
Casper, Wyo.	19.0	....	....	....	19.0	19.0	14.0	18.0	13.0	2.5
Seattle, Wash.	15.0	....	....	....	15.0	16.0	12.0	20.0	13.0	2.0
Minneapolis, Minn.	19.2	....	....	....	19.2	18.9	12.0	....	....	2.0
Average price	18.68	....	....	....	18.352	18.99	13.27	21.71	13.65	2.46

REPARATION IS ASKED IN RATE COMPLAINTS

WASHINGTON, D. C., May 4.—The Alexandria Refining Co. has filed complaint with the Interstate Commerce Commission against the Missouri Pacific Railroad charging that rates on fuel oil from El Dorado, Norphlet and Smackover, Ark., to Alexandria, La., between July 1, 1923, and June 15, 1924, were unreasonable. The refining company asks reparation.

The Kyoleum Co. also has filed a complaint alleging a straight overcharge on a shipment of fuel oil out of Tulsa, Okla., on October 3, 1918, to St. Catherine, Ont., and thence to Woodlawn, Pa. It also asks reparation.

MOVE CHICAGO OFFICE

The general sales office of Barnsdall Refining Co. has been moved to the fifteenth floor of 624 South Michigan Avenue, which as the business home of independent oil companies is becoming known as the Petroleum Building. The C. A. Gustafson Co., Chicago marketing firm, has also occupied its new quarters there. The Chicago sales division of the Pure Oil Co. has moved to the Standard Bank Building at 105 West Monroe Street.

REFINERY FOR HOLDENVILLE

HOLDENVILLE, Okla., May 5.—The Holdenville Refining Co. of Holdenville, a new corporation with a capital stock of $50,000 has applied to the State Issues Commisson for a permit to exchange $15,000 of its stock for refinery equipment. It plans to install a refinery on a five-acre tract donated by the Holdenville chamber of commerce. L. W. Harris is president of the ocmpany; H. V. Schaff, vice president, and C. O. Lucas, secretary.

NORTH CAROLINA DEALERS

CHARLOTTE, N. C., May 4.—Organization of a permanent State association of North Carolina Gasoline and Tire Dealers will be perfected at a meeting of the temporary North Carolina Gasoline and Tire Dealers Association here May 12. Officials of the National Tire Dealers Association and the Rubber Association of America are scheduled for addresses in addition to H. J. James, secretary of the American Oil Men's Association.

ETHYL GAS IN OKLAHOMA

OKLAHOMA CITY, Okla., May 4.—No protests have been made to the State against the use of ethyl gas or of any harm having come of its use, according to Edward Graham, superintendent of the gasoline inspection service in the State Oil and Gas Conservation Bureau. Some of this gas, which is a blended product, is being sold in Oklahoma City and some in the northern part of the State, Graham says.

MADE SALES MANAGER

L. R. Brammer has assumed his new duties as refinery sales manager of Waite Phillips Co. at Tulsa to succeed Homer J. Smith, who resigned. Mr. Brammer for the last six months has been in charge of the sales department at the Kansas City, Mo., office of the company. He has been with Waite Phillips, formerly being assistant sales manager at Tulsa.

THREE-CENT TAX FOR MAINE?

AUGUSTA, Me., May 5.—A bill has been introduced in the lower house of the State Legislature to increase the tax on gasoline from 1 to 3 cents a gallon.

Improvements in New Dephlegmators

To Eliminate Disadvantages in Fractionating Towers, Reducing Distillates Requiring Redistillation and Treatment Cost

Simple in construction, a new dephlegmator has been designed and put into use by D. C. Brandon, New York City engineer and inventor, to eliminate the disadvantages now existing in fractionating towers. The new apparatus makes it possible to obtain every product desired from the oil vapors practically and easily. By the simple process, it not only will eliminate the production of distillates requiring redistillation but also will reduce the cost price of the treatment of different kinds of crude oil.

With the dephlegmators hitherto known it is very difficult to obtain the so-called "straight run" gasoline from crude oils containing water. The production of straight run gasoline decreases in proportion to the increase of water content of the crude oil to be treated, and the products requiring redistillation increase quickly. This causes the capacity of the manufacture to be diminished as the stills, which could be used for other purposes, have to be used as redistillate stills.

Obviously, in these present dephlegmators, the fuel consumption also will increase and the large stock of gasoline requiring redistillation will constitute a great danger to the refinery.

Advantages Claimed

The new dephlegmator, according to Mr. Brandon, possesses the following advantages over similar apparatus already known:

1. All the parts subjected to incrustation or breakage are easily accessible without dismantling the apparatus.

2. The composition of the distillates produced for each compartment of the apparatus can be regulated exactly and very simply by steam and water taps arranged on the dephlegmator.

The dephlegmator, according to Mr. Brandon's invention, comprises a vertical column provided with two or more superimposed horizontal cooling compartments separated by vapor chambers adapted to be heated. The cooling compartments preferably consist of groups of pipes closed at their outer ends by removable covers or headers extending from the column. These headers or covers are provided with inlet and outlet conduits for the cooling liquid, and the vapor chambers between the cooling compartments are provided with baffle plates through or around which the vapors can pass in the upward travel. In a preferred embodiment the baffle plates are provided with tube shaped vapor outlets, the openings being above the outlets for the condensates formed in the vapor chambers.

Mr. Brandon's dephlegmator is illustrated in the drawings of Figures 1 and 2. In the drawings, wherein similar reference numbers indicate similar parts, Figure 1 is a vertical section of the dephlegmator while Figure 2 is a vertical section along the line 11-11 of Figure 1.

Apparatus Described

The apparatus comprises a vertical column divided into superimposed chambers, a, b, c, d and e. Of these, the chamber a consists of a horizontal cooling compartment 1, which crosses the part 2, 3 of the vertical column.

The cooling compartment 1 is formed by cooling pipes mounted in the perforated pipe-plates 4 and 5. These pipe plates are covered by the removable arched covers 6 and 7 which extend from the column. In the cover 6, which is provided with a horizontal baffle plate, two openings 8 and 9 are provided which serve for the inlet and the outlet of the cooling medium. The uppermost end 2 of the vertical column is closed by a dome, which has a central tube 11, provided with a flange for attachment to a cooler.

The compartment b comprises a vertical cylinder 12, provided at both ends with flange rings for connecting to the vertical cylinder pieces of the compartments a, c respectively.

Between the compartments a and b, a sheet iron plate 13 is arranged, from which a dish 14 is suspended by bolts. The plate 13 has in the middle an aperture 15 through which the vapors can pass to the cooling chamber 1, and in the dish 14 four smaller apertures 16 are made to this end, preferably close to the edge of this dish.

Lower down in the wall of the compartment b two branch pipes 17 and 18 are arranged, which are provided with screw couplings to which a double ring-shaped steam conductor is connected. In the same wall a tube 19 is provided for removing the condensates to the cooler.

Between the compartments b and c, an imperforate plate 20 is arranged which in the middle possesses an open vertical pipe 21 through which the vapors pass from compartment c to compartment b.

The compartment c is similar to the compartment a. The compartment d forming the lower part of the vertical column, is provided with a flanged tube 23 for connecting a separator used for removing the liquid from the vapors coming from the still. A plate 24 with central opening 25 is arranged between the compartments c and d.

The compartment e serves as a base for the dephlegmator, and according to a preferred embodiment of the invention this compartment is provided in the middle with an inverted U-shaped pipe 26, which at its outer end is provided with a flange 27, the latter being connected with an outlet pipe for leading heavy condensate to a cooler. Furthermore, two pipes 28 and 29 are present which are connected with a double ring-shaped steam conductor, this latter being positioned above the point 37 of the tube 26, the reason for this arrangement being hereinafter explained. The other end 36 of the U-shaped tube 26 is open and terminates inside the dephlgmator, whilst on the curve of the said tube is arranged an upward hollow projection 35.

Separating the compartments d and e is a plate 38 having a conical or flared plate 30 attached thereto, the diameter of this latter being smaller than that of the dephlegmator column so that vapors formed in the compartment e, as will be hereinafter described, may ascend between the edge of this plate and the walls of the column. In order to allow these vapors to pass from the compartment e, holes 34 are provided in the plate 38.

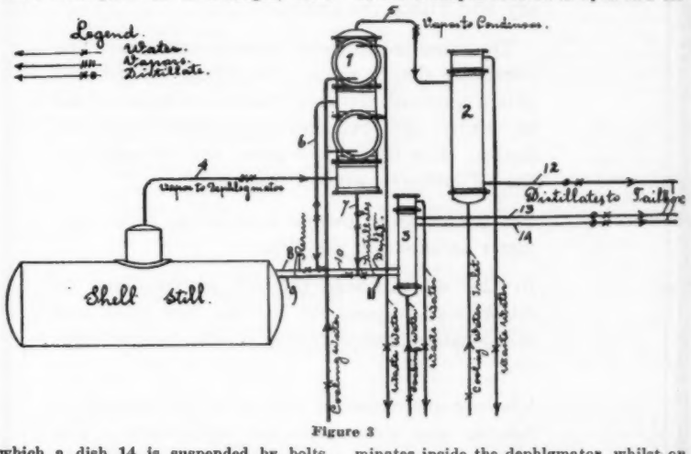


Figure 3

Method of Operation

The improved dephlegmator works as follows:

The vapors from a still after passing through a separator for removing the liquid from the vapors, enter the dephleg-

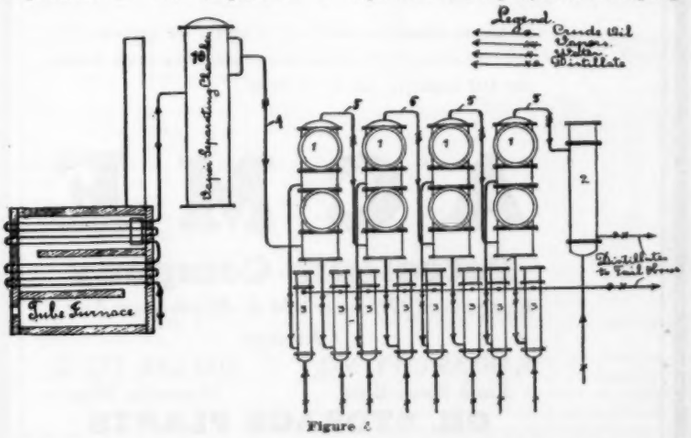


Figure 4

mator at 23. Passing through the opening 25 in the plate 24 they reach the undermost row of pipes in the cooling compartment c where their flow is interrupted by each pipe. The condensates fall from the uppermost pipes on to those arranged beneath so that the vapors are

(Continued on Page 132)

Fig. 1.

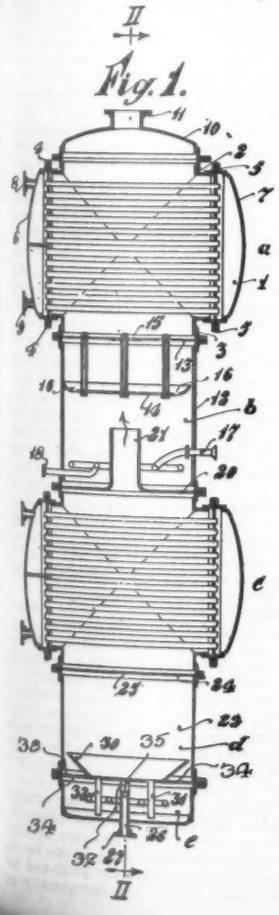
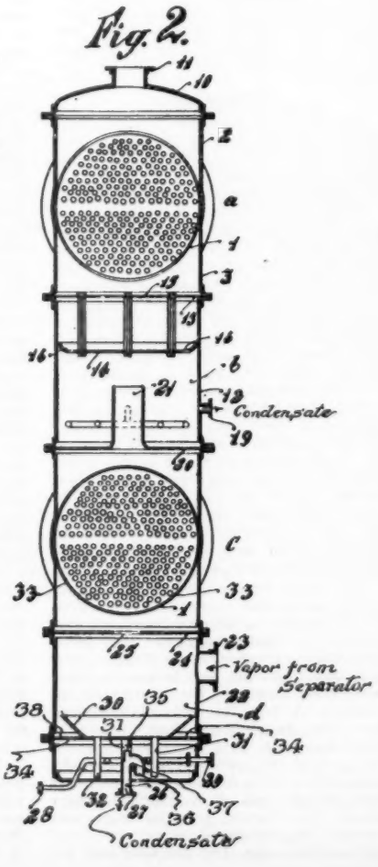


Fig. 2.



The Show Couldn't Go On But for the Men Behind the Scenes

The curtain goes up and the actors enter the stage. The play goes on and those in the audience become acquainted with the plot and the characters. But few ever give a thought to those behind the scenes—those who arrange the scenery and direct the show.

The same is somewhat true in business. The consumer drives up to the filling station and gets a quart of oil. He knows the brand of oil he wants and becomes acquainted with the dealer. But he seldom gives the refineries or the oil jobbers a second thought.

Yet these forces behind the scenes make customer satisfaction possible.

In the oil business the oil jobber—such as ACME—is responsible for the low price and the constant completeness of the dealers' supply.

We buy quantities of oils from the various refineries and store it in our own tanks. The filling stations send their assorted orders to us instead of buying from a number of refineries. Our own tank cars enable the quick filling of these orders.

The expensive detail of handling a large number of comparatively small accounts is thereby eliminated from the refiner's business. Long distance buying and costly delay are eliminated from the dealer's business.

This ACME SERVICE has proved itself worth while for both the dealer and the refiner. Try it now—it pays.

(This is twenty-seventh of a series of informatory advertisements on distribution problems with which the Oil Industry has to contend.)

ACME

Petroleum Company

Executive Offices: 624 S. Michigan Ave., Chicago

KANSAS CITY, MO. Land Bank Bldg. DALLAS, TEXAS Magnolia Bldg.

OIL STORAGE PLANTS

Over 7,000,000 Gallons Storage

West Tulsa, Okla. Blue Island, Ill.

(Chicago Switching District)

GALLONAGE GOOD, CHICAGO REPORT; PRICES PRACTICALLY UNCHANGED

By J. B. Waldo

CHICAGO, May 2.—In regard to the refinery markets the rule is for Tulsa to to be optimistic while Chicago is pessimistic. This is nautral, considering that the former is a selling and the latter a buynig market so far as refinery sales are considered. According to reports of oil men recently returned Tulsa has been having a case of the blues, while Chicago oil men without being unduly elated are satisfied with the conditions prevailing and hopeful. Of course they would like to be doing more business and would prefer to have a more settled market, but the movement of gasoline has been more than fair during the past week, although rather uneven. Some days have been very good with some marketers and others have had equally good returns on other days. It has not been a case of everybody busy every day of the week, but they have all done business, more than enough to pay expenses.

The demand for gasoline during the past week, has been better to a marked degree than during the preceding week. The call has been very largely for the U. S. Motors grade and the rule has been for the purchaser to insist on prompt deliveries. These have been rather hard to get. Apparently there has been some diversion of cars from their usual employment. Some state a large number of dirty cars have been sent to the Smackover district to move the heavy crude and others that an unusual number of cars are being employed in the shipment of the recent large export orders to the Gulf ports. Whatever the cause, there has been complaint regarding delays in shipments and this at times has placed a premium on cars in the yards or rolling, which could be diverted to give a prompt delivery. Some claim jobbers' stocks are fairly large or at the usual average while others state they are light. The probability is that some jobbers have average stocks and others have very little gasoline on hand and require quick deliveries to care for their trade.

Gallonage Large

Regarding the gallonage of the jobbers there is no doubt it is large. The percentage of gain during April over the corresponding month last year is not as large as during the first three months of the year but this is because last April saw a much better business than during the preceding months of 1924. May was not a good month last year and the way this month has made a start, the probability is the percentage of increase over the corresponding month of 1924 will show a larger gain than did April. Those selling organizations, both refiners and marketers, who have made a specialty of securing marginal contracts, continue to report their customers taking the full amount of their contracts. The majority of these contracts were not as large as for the preceding year, which will partly account for the condition and various clauses protecting the jobber such as those which base the contract price on the spot market remove the temptation to buy in the spot market and let the marginal contracts slide.

The prices for the various grades have shown no marked change but are firm. U. S. Motors gasoline has been sold regularly the week through at 10¼ cents with little variation. Some cheaper gasoline has been sold but frequently there was some reason in the quality of the product. A few fag ends of purchases over the month were closed out at a little less than 10¼ cents and towards the end of the week a limited quantity was sold at 10½ cents but in some cases the reason was the prompt delivery given. The higher gravities have sold slowly at unchanged prices compared with a week ago. The one item that has shown higher prices has been natural gasoline, which has been in demand and hard to buy for prompt deliveries.

There has been very little gasoline buying done for May by car lot marketers. They have not been freely offered and where they have had offers they have been too unsettled in their own minds to buy any real amount. Buy as we sell, has been the general rule, with few exceptions, and the result will be that any change in the demand will be felt more promptly in the prices. Those refiners who quote and sell direct to the trade will have some advantage under such conditions. Offers have been made to book orders for Motors gasoline over May at 10½ cents and later at 10¾ cents by responsible refiners and a little business has been done at the latter price. Late in the month there were a limited number of offers to accept orders for May delivery at 10 cents but the marketers stated in these cases the offers were not made by the most responsible refiners, rather those of the speculative class, and shipments on the orders have been slow, very slow.

One thing that has unsettled the viewpoint of the buyers has been the constant rumors of declines in tank wagon and crude prices. On some days there have been such flocks of rumors that the tank wagon price was to be reduced a certain amount on a definite date that even the assurances of the executives of the Standard Oil Co. that no such reduction had been even suggested, were not wholly able to quiet the apprehensive. It seemed at times that some one desirous of securing a lower price situation had set about cultivating these reports with the obvious idea of causing such a hesitancy in the buying that the lack of business would force such a movement.

It is not the wish of the writer to pose as one who knows and no one is better aware of the folly of the individual who tries to predict tank wagon changes in advance, but it is his belief that the present tank wagon scale is not liable to be generally changed for some time, and that the efforts of those if there be any, who are trying to force such a change will be futile for the present. There is no intimation from any responsible source that the tank wagon prices are more than 1 cent out of line generally with the refinery market. Why not wait and see if the business done by the refiners during May will not be enough better to permit them to secure at least an 11-cent refinery market for U. S. Motors gasoline? If the refinery situation is such that they must press their sales at the expense of prices, in the face of increased sales, it will then be time enough to act.

Kerosene Demand Better

The demand for kerosene is better, much better. One large refiner at least has instructed his sales offices to take no more orders until further notice for 42-44 gravity for shipment during May. The business is larger although the individual orders are not large, a car here and a car there, but a good number of cars as a whole. There has been an unusual proportion of orders for the higher gravity. Prices are a little better, not much change but they are firm. The distillate business is very light, just a few scattered cars.

Gas oil is moving in a routine fashion, a scattered demand for a car or two with no large buying. The market is unchanged as to prices, refiners selling at 2¾ cents and the car lot marketers at 2⅞ to 3 cents with an occasional car at 3⅛ cents. This is the general range although some refiners are asking more but getting little business so far as can be learned here.

Fuel Oil

Fuel oil is once more in the peculiar position of costing the distributors as much or very nearly as much as they can induce the consumers to pay for it. Nominally the market for 24-26 fuel oil is 95 cents to $1, but the quantity of

oil selling at that figure is small. Some orders have been taken at these figures and others at as low as 92½ cents for prompt delivery and deferred shipments over a period of several weeks at 90 cents. There are many dealers who believe that the market should show strength and cite the facts that little fuel oil is offered and the slow deliveries as indicating a condition which will bring strength to the market. On the other hand, Smackover crude is being freely offered at 75 cents although some of the larger dealers claim the bottom price with them is 80 cents and report the situation in the Smackover Field as tight, but the offers have been made at the lower price and business done on that basis.

Buyers are still ordering fuel for their immediate needs to a great extent. Some large railroad contracts or renewals of contracts are reported and the roads are using more oil than in previous years.

Lull in Lubs

The demand for lubricating oils is variously reported by refiners. Some state last month was the largest in their history including both domestic and export business, while others state their business is just fair. There seems to be a lull in the placing of new orders for large quantities although shipments against contracts are continuing.

Tank Wagon Rumors

The tank wagon situation remains unchanged. There are certain distributors who want a decline, or say they want it but when it comes to figuring what the decline should be, there is less agreement. Any tank wagon price must be based on the cost of the product plus freight, expenses of distribution, overhead charges and a reasonable profit. These costs are seldom the same. Two jobbers in the same locality may pay a different price, and their costs of operation may vary. The apparent difference between the present tank wagon prices in a great number of localities and the price which those who argue for a lesser rate suggest is around 1 cent a gallon. This is as close as can be termed safe. It is impossible to figure the same costs for each dealer. There is one dealer who has a bulk station on a siding in a very good town. He operates a drive-in station in connection with his filling station. He runs two tank trucks. He has no employes outside his own family. His costs are at a minimum. Should he add another staion he would have to employ help and his costs would be increased, and it might be his percentage of costs on his total sales would be increased. In fact, it is the usual experience that when a concern enlarges its plant its selling costs are increased and unless it is able to decrease its costs of doing business in other directions than selling the profits figures a less percentage. In many lines of merchandising the quantity price is so much less than the car lots price it pays to increase the volume of sales but this is not as true in the gasoline business and many a distributer has found that by adding stations he has not increased either the percentage of his profits on the business done or his gross profits.

Conditions in the country districts are not as bad as in this city as to price cutting but they are very unsettled. One of the larger distributers has asked his branch station managers throughout the territory to report on conditions and these reports are rather disheartening as they tell of cuts and rebates and offers of all sorts to secure business. In some places it is asserted no attempt is made to maintain a 2-cent differential between the tank wagon and the station price and small dealers seem to take delight in offers of cut prices and open and secret reductions. The low cost of doing business on the part of small concerns where everybody in the family works, including father, makes it possible for the smaller dealer to be an important factor locally in the price situation just so long as he can secure a supply of salable gasoline at the ruling refinery price.

EASTERN GASOLINE LESS STRONG DUE TO CALIFORNIA SHIPMENTS

By N. O. Fanning

NEW YORK, May 4.—The refined oil markets here were comparatively quiet during the past week, the only change being a drop of 5 cents per bbl. in the price of bunker oil by the Standard Oil Co. of New Jersey, making the present quotation $1.75 at New York, Baltimore and Norfolk, and $1.70 at Charleston. This is only 5 cents below the peak price of the year.

The gasoline tank wagon remained firm. If anything the gasoline situation is a little less strong than a week ago. For one thing, consumption has dropped off slightly due to inclement weather, which, however, has been expected. Furthermore, the supply of gasoline available for use in this territory has increased as a result of larger local production and heavy receipts from California. Mid-Continent gasoline is now making its appearance here in tank car lots in slightly increased quantities. All of these factors make for a decline in prices.

Strange to say, the menace of California had been overlooked earlier in the year, although statistically, the menace was as real in November, December and January last as it is at present. Stocks of gasoline and crude had been piling up on the Pacific Coast for two years, and it was evident to any who studied the situation that the growing surplus would have to be thrown on outside markets sooner or later. Perhaps production of crude in California was expected to go much lower than was actually the case. This would have enabled the Pacific Coast markets to absorb the surplus.

It is now accepted that this market (the Atlantic Coast) will have to absorb more California gasoline than was originally anticipated. While this absorption is in progress, the price of gasoline is almost certain to go lower, unless consumption is even greater than the oil business has a right to expect. The main reason for this view is that the Mid-Continent gasoline market has apparently fallen flat. Without big buyers in the Mid-Continent market, producers will have to sell their product as best they can by shipping it to jobbers in this territory and in the Middle West.

Consumption Important

One reason that pessimistic predictions cannot be made at the present time without considerable risk is because the element of consumption is so uncertain. It is almost impossible to grasp the tremendous use of gasoline, and there is no telling what might happen in the event of an unusually good spring, summer and fall, from the weather viewpoint. Probably present estimates of consumption would be dwarfed, and an apparently bad situation would turn into a highly favorable one. Such unforeseen changes are more or less common in the history of the oil business.

On the other hand, unfavorable developments with regard to consumption would undoubtedly bring about a bad turn in the oil business. So far as the production and supply situation in the petroleum industry is concerned, the bad turn has come. That is the view of the market which the writer has heard in this territory during the past week from men who are usually optimistically inclined.

Another feature of the present situation, so far as gasoline is concerned, is that the recognized possibility of price recessions has restricted export buying. It has been almost two months since an important bulk shipment of gasoline left this harbor.

Kerosene Improving

The kerosene market has been stimulated by improved export sales on the part of European buyers. So far as domestic business is concerned, the situation is unchanged.

Bunker Oil Weak

The weakness in bunker oil is natural in view of the fact that prices have been reduced in almost every other bunker oil market. This territory was the last to follow as consumption held up so well, and due to the distance from the scene of the overproduction of heavy oil at Smacokver. Further reductions may be expected in the near future.

Diesel oil is soft in sympathy with bunker oil, although no price change has yet been recorded.

Gas oil tends lower, with no important new transaction recorded.

Lubricants Soft

The industrial demand for lubricating oils is disappointing. Comparatively large orders from the larger manufacturing industries were expected to come in by this time, but trade seems to have slackened since the first of the year instead of gaining momentum. The only branch of the lubricating oil business that has come up to expectations has been the motor trade.

Although no price changes have been registered in the lub branch of the industry, the market tends toward lower levels. Especially is this true of red and pale oils.

Paraffin wax is also in limted demand, with prices tending lower.

Tanker Charters

The tanker charter market continued somewhat more active, with new fixtures including the following vessels:

Tanker Vaba (Am.) 2,467 tons net, May loading, Gulf to Providence, 24 cents per bbl.

Tanker Wabasha (Br.) 3,797 tons net, May loading, United States Gulf to Ghent, gasoline, 24 shillings.

Tanker Aztec (Nor.) 3,603 tons net, crude oil, May loading, Tampico to north Hatteras, 24 cents.

Tanker Scottish Minstrel (Br.) 4,026 tons net, same, at 24 cents.

Exports

Kerosene was about the only active feature in the oil export market at New York during the week. The movement of this product continued heavy in bulk and in cases. Bulk exports amounted to 3,067,612 gallons, while case shipments were 1,994,490 gallons.

The revival in the kerosene trade is due largely to buying from Europe, and especially England. The Anglo-American Oil Co. has put in some big bulk orders lately with local refiners. Most of these call for water white, it is understood.

Aside from kerosene, the bulk export market is practically dead. As some forward orders have been placed for May, that month is expected to show greater activity.

Barrel exports of lubricating oil held up fairly well, amounting during the week ended April 29, to 1,275,950 gallons, against 1,488,250 gallons the preceding week. Case shipments continue small.

The export wax market is fairly active, with the current movement limited.

Considerable petroleum coke has been exported during the last three weeks, all going to France or Germany. A shipment of 995 tons was reported last week, while two weeks ago there was a shipment in bulk of 2,240,560 pounds (about 1,000 tons). Three weeks ago a shipment of 1,032 tons was made to France.

The following table shows principal exports of petroleum and petroleum products from New York reported during the past three weeks (figures in gallons unless otherwise stated in parentheses):

	Week Ended April 29	April 22	April 15
Gasoline:			
Cases	1,089,480	1,254,350	1,387,800
Kerosene:			
Bulk	3,067,612	5,523,915	.....
Cases	1,994,490	649,000	1,745,430
Lubricating Oil:			
Bulk	.....	209,607	.....
Barrels	1,275,950	1,488,250	289,100
Cases	86,120	98,260	256,100
Lubricating Grease:			
Cases (No.)	.....	1,330	.....
Paraffin Wax:			
Bags (Lbs.)	762,080	1,689,820	1,303,940
Barrels	.....	712	.....
Petroleum Asphalt:			
Bulk (Lbs.)	.....	1,443,216	.....
Barrels	.....	.....	869
Petroleum Coke:			
Bags (Tons)	995	.....	1,032
Bulk (Lbs.)	.....	2,240,560	.....
Crude Oil:			
Barrels	3,128	2,977	1,727

Oil Receipts

Receipts of crude and refined oil at Atlantic ports, as estimated by The Oil and Gas Journal, averaged 504,000 bbls. daily during the week ended April 29, against 525,000 bbls. daily the preceding week.

The totol movement for the first four weeks in April averaged 538,000 bbls. daily, against 528,000 bbls. daily during the entire month of April, 1924.

Receipts from the Gulf Coast during the week ended April 29, 1925, averaged 312,000 bbls. daily against 360,000 bbls. daily during the week ended April 22.

Receipts from the Pacific Coast showed a substantial gain, averaging 109,000 bbls. daily, compared with 48,000 the week before.

Imports, on the other hand, were smaller than in some weeks, averaging 83,000 bbls. daily, compared with 117,000. The decline in imports partly offset the gain in receitps from California and brought down the total movement considerably.

The following table shows daily average receipts of crude and refined oil by water at Atlantic ports from the Gulf and Pacific coasts of the United States, and imports, for the last three week; also monthly record for the last 12 months (figures in bbls.):

	Week Ended April 29	April 22	April 15
Gulf Coast	312,00	360,000	412,000
Pacific Coast	109,000	48,000	128,000
Imports	83,000	117,000	103,000
Total	504,000	525,000	643,000

Daily Averages by Months

The foregoing estimates are based upon the carrying capacity of incoming oil-laden tankers.

	Gulf	Pacific	Imports	Total
March, 1925	273,000	82,000	135,000	490,000
February	262,000	51,000	147,000	460,000
January	311,000	77,000	133,000	521,000
Dec., 1924	306,000	83,000	85,000	474,000
November	246,000	80,000	150,000	476,000
October	246,000	120,000	88,000	454,000
September	270,000	104,000	101,000	475,000
August	310,000	127,000	84,000	521,000
July	318,000	85,000	114,000	517,000
June	302,000	138,000	136,000	571,000
May	276,000	122,000	144,000	542,000
April	262,000	143,000	123,000	528,000

CALIFORNIA OUTPUT DECREASED IN MARCH

California crude oil production in March averaged 600,839 bbls. daily, compared with 602,494 in February.

Rosecrans and Huntington Beach showed the only sizeable gains, the former being up 5,192 and the latter 1,786 bbls. daily to 17,074 and 42,695, respectively.

Torrance, Dominguez, Midway-Sunset, and Long Beach Fields showed declines ranging between 2,463 and 1,389 bbls. daily.

The following table summarizes operations and production of California Fields:

	Drg.	Comp.	Dy. Av. Prod. March	Output Feb.
Long Beach	19	4	522	117,114	118,503
Midway-Sunset	66	11	2,977	102,719	104,143
Santa Fe Spgs.	1	..	254	49,996	50,140
Dominguez	17	4	53	48,693	51,075
Huntington B.	24	4	214	42,695	40,909
Torrance	21	4	560	38,972	41,435
Elk Hills	9	1	266	37,896	37,738
Coalinga	7	..	1,041	22,139	22,538
Ventura-N'hall	45	1	654	20,469	20,550
Coyote	4	..	231	20,232	19,711
Montebello	5	..	156	18,513	19,284
Kern River	2	1	2,170	17,376	18,545
Rosecrans	74	9	40	17,074	11,882
Miscellaneous	159	13	2,244	46,951	45,738
Totals	453	52	11,482	606,839	602,494

PENNZOIL EXTENDS DISTRICT

OIL CITY, Pa., May 4.—Pennzoil Oil Co. has announced the extension of its selling districts to include all southeastern Virginia in addition to its present territory and the opening of a company office in Chicago. The Chicago office will be in charge of Howard Shamburg, formerly of Titusville, Pa. In extending its selling districts, the company has made arrangements with the Holladay Co. of Richmond and the Payne, Anderson, Smith Co. to handle its products in southeastern Virginia.

REFINERY AND CRUDE PRICES

Quotations on Principal Refined Products and Crude Petroleum Markets in All the American Oil Fields

GASOLINE AND NAPHTHA

	May 5		April 28		April 21	
OKLAHOMA (Group 3)—						
50-52 450 end point (Naphtha)	.09¾	.10	.09¾	.10	.10	.10¼
56-58 450 end point	.10	.10¼	.09¾	.10	.10	.10¼
58-60 437 end point (U. S. Motor)	.10½	.10¾	.10¼	.10½	.10½	.10¾
60-62 400 end point	.11½	.11¾	.11½	.11¾	.11½	.11¾
64-66 375 end point	.12¾	.13	.12¾	.13	.12¾	.13
68-70 350 end point	.13	.13¼	.13	.13¼	.13	.13¼
KANSAS—						
58-60 437 end point (U. S. Motor)	.10½	.10¾	.10¼	.10½	.10½	.10¾
NORTH TEXAS—						
48-52 450 end point (Naphtha)	.09¾	.10	.09¾	.10	.10	.10¼
50-52 440 end point (Naphtha)	.09¾	.10	.09¾	.10	.10	.10¼
56-58 450 end point	.10	.10¼	.10	.10¼	.10	.10¼
56-60 437 end point (U. S. Motor)	.10¼	.10½	.10¼	.10½	.10¼	.10½
60-62 400 end point	.11½	.11¾	.11½	.11¾	.11½	.11¾
64-66 390 end point	.12¼	.12½	.12½	.12¾	.12½	.12¾
64-66 375 end point	.12¾	.13	.12¾	.13	.12¾	.13
68-70 360 end point	.13	.13¼	.13	.13¼	.13	.13¼
NORTH LOUISIANA—						
56-58 450 end point	.10	.10¼	.10¼	.10½	.10¼	.10½
58-60 437 end point (U. S. Motor)	.10½	.10¾	.10¾	.11	.10½	.10¾
60-62 400 end point	.11½	.12	.11½	.12	.11½	.12
64-66 390 end point	.12½	.12¾	.12½	.12¾	.12¾	.13
64-66 375 end point	.12¾	.13	.12¾	.13	.13¼	.13½
ARKANSAS—						
58-60 450 end point	.10½	.10¾	.10½	.10¾	.10¾	.11
58-60 437 end point (U. S. Motor)	.10¾	.11	.10¾	.11	.11	.11¼
64-66 375 end point	.13	.13¼	.13	.13¼	.13	.13¼
ROCKY MOUNTAIN STATES—						
*58-60 437 end point (U. S. Motor)	.12¾	.13	.12¾	.13	.12¾	.13
PENNSYLVANIA—						
52 Naphtha	.12¾		.12¾		.12¾	
54 Naphtha	.12¾		.12¾		.12¾	
56 Gasoline	.13		.13	.13¼	.13	
58 Gasoline	.13		.13	.13¼	.13	
60 Gasoline	.14		.14	.14¼	.13¾	
62 Gasoline	.14½		.14½	.14¾	.14½	
64 Gasoline	.15		.15	.15¼	.15	
66 Gasoline	.15		.15	.15¼	.16	
68-70 Gasoline	.17¼		.17¼	.17½	.18	
CALIFORNIA—						
54-56 437 end point (U. S. Motor) domestic	.11	.11½	.11	.11½	.11	.11½
CHICAGO DIST. (Based on Group 3)—						
50-52 450 end point (Naphtha)	.09¾	.10	.09½	.09¾	.09½	.09¾
56-58 450 end point	.10	.10½	.10	.10¼	.10	.10¼
58-60 437 end point (U. S. Motor)	.10¼	.10½	.10¼	.10½	.10½	.10¾
60-62 400 end point	.11½	.11¾	.11¾	.12	.11½	.11¾
64-66 375 end point	.12½	.12¾	.12¾	.13	.12¼	.12½
68-70 360 end point	.13	.13¼	.13¼	.13½	.13	.13¼

NATURAL GASOLINE

	May 5		April 28		April 21	
OKLAHOMA (Group 3)—						
Grade Double A, 80-87.9, 375 e.p., rec. 90%	.10¼	.10½	.09¾	.10	.10	
Grade A, 72-79.9, 375 end point, rec. 90%	.10¼	.10½	.10		.10	
Grade Double B, 84-92, 375 e.p., rec. 85%	.09¾	.10	.09¾		.09	.09¼
Grade B, 76-83.9, 375 end point, rec. 85%	.09¾	.10	.09¾		.09	.09¼
Grade C, 80-90, 375 end point, rec. 78%	.09¾		.09¼		.08¼	.08½
NORTH TEXAS—						
Grade Double A, 80-87.9, 375 e.p., rec. 90%	.10¼	.10½	.09¾	.10	.10	
Grade A, 72-79.9, 375 end point, rec. 90%	.10¼	.10½	.10		.10	
Grade Double B, 84-92, 375 e.p., rec. 85%	.09¾	.10	.09¾		.09	
Grade B, 76-83.9, 375 end point, rec. 85%	.09¾	.10	.09¾		.09	
Grade C, 80-90, 375 end point, rec. 78%	.09¾		.09¼		.08¼	.08½
NORTH LOUISIANA—						
Grade A, 72-79.9, 375 end point, rec. 90%	.10½		.10¾		.09¾	.10
Grade B, 76-83.9, 375 end point, rec. 85%	.10		.10		.09¼	.09½
Grade C, 80-90, 375 end point, rec. 78%	.09½		.09½		.08½	
CALIFORNIA—						
68-80 absorption, 360-390 end point	.13½	.14	.13½	.14	.13½	.14
78-84 compression, 350 end point	.13½		.13½		.13	
CHICAGO DIST. (Based on Group 3)—						
Grade Double A, 80-87.9, 375 e.p., rec. 90%	.10¼	.10½	.10	.10¼	.09	.09¼
Grade A, 72-79.9, 375 end point, rec. 90%	.10¼	.10½	.10	.10¼	.09	.09¼
Grade Double B, 84-92, 375 e.p., rec. 85%	.09¾	.10	.09	.09¼	.08	.08¼
Grade B, 76-83.9, 375 end point, rec. 85%	.09¾	.10	.09	.09¼	.08	.08¼
Grade C, 80-90, 375 end point, rec. 78%	.09¾		.08¼	.08½	.07¼	.07½

MOTOR NATURAL GASOLINE (BLENDS)

	May 5		April 28		April 21	
OKLAHOMA (Group 3)—						
60-62 450 end point	.10		.10	.10¼	.10	.10¼
64-66 437 end point	.10		.10	.10¼	.10	.10¼
68-70 430-435 end point	.10		.10	.10¼	.10	.10¼
NORTH TEXAS—						
58-60 440 end point	.10		.10	.10¼	.10	.10¼
58-60 450 end point	.10		.10	.10¼	.10	.10¼
PENNSYLVANIA—						
*60-62	.13		.13		.13	
*64-66	.13		.13		.13	
*66-68	.13		.13		.13	
*68-70	.13		.13		.13	
CHICAGO DIST. (Based on Group 3)—						
60-62 450 end point	.09¾	.10	.09¾	.10	.09	.09¼
64-66 450 end point	.10	.10¼	.10	.10¼	.09	.09¼
68-70 437 end point	.10	.10¼	.10	.10¼	.09¼	.09½

*At Sistersville, W Va.

BURNING OIL

	May 5		April 28		April 21	
KANSAS—						
41-43 water white Kerosene	.04⅜	.04⅛	.04¼	.04½	.04¼	.04½
OKLAHOMA (Group 3)—						
41-43 water white Kerosene	.04⅛	.04¼	.04	.04¼	.04	.04¼
42-44 water white Kerosene	.04⅜	.04½	.04¼	.04½	.04¼	.04½
40-41 prime white Kerosene	.03¾	.04	.03¾	.04	.03¾	.04
NORTH LOUISIANA—						
41-43 prime white Kerosene	.04¾		.04¾		.04½	.04⅝
42-44 water white Kerosene	.05		.05		.04¾	.05
ROCKY MOUNTAIN STATES—						
*40-42 water white Kerosene	.07	.07¼	.07	.07¼	.07	.07¼
NORTH TEXAS—						
41-43 water white Kerosene	.04	.04⅛	.04	.04⅛	.04	.04⅛
40-42 prime white Kerosene	.03⅞	.03¾	.03¾		.03¾	
41-43 prime white Kerosene	.04	.04⅛	.04	.04⅛	.04	.04⅛
42-44 water white Kerosene	.04¼	.04½	.04¼	.04½	.04¼	.04⅝
ARKANSAS—						
41-43 water white Kerosene	.04½	.04¾	.04½	.04¾	.04½	.04⅝
43-44 water white Kerosene	.04¾	.05	.04¾	.05	.04⅝	.05
PENNSYLVANIA—						
43 Kerosene prime white	.06¾		.06¾		.06¾	
45 Kerosene water white	.06½		.06½		.06½	
46 Kerosene water white	.07½		.07½		.07½	
47 Kerosene water white	.07¾		.07¾		.07¾	
34 Neutral	.07½		.07½		.07½	
34 Sundebloomed Neutral	.08	.08¼	.08	.08¼	.08½	
36 Miners' Neutral	.07½		.07½		.07½	
300 Mineral Seal	.07½		.07½		.07½	
CALIFORNIA—						
40-42 water white (high burning test)	.07½	.08	.07½	.08	.07¼	.08
Engine distillate, 43-45 445 end point	.08½	.09	.08½	.09	.08½	.09
Engine distillate, 42-44 480 end point	.07¾	.08	.07¾	.08	.07¾	.08
CHICAGO DIST. (Based on Group 3)—						
41-43 water white Kerosene	.04⅛	.04¼	.04⅛	.04¼	.04⅛	.04¼
42-44 water white Kerosene	.04¼	.04½	.04¼	.04½	.04¼	.04½

*Colorado points.

FUEL OILS

	May 5		April 28		April 21	
KANSAS—						
24-26 Fuel Oil	.95	1.00	1.02½	1.05	1.10	1.15
32-36 Gas Oil	.03⅛	.03¼	.03¼	.03½	.03¼	.03½
38-40 Distillate	.03¼	.03½	.03½	.03⅝	.03½	.03⅝
OKLAHOMA (Group 3)—						
Below 22 Fuel Oil (sellers' cars)	.90		.90		.95	
22-26 Fuel Oil (sellers' cars)	.90	.95	.90	.95	1.02½	1.05
24-26 Fuel Oil (buyers' cars)	.90	.95	.95	1.00	1.02½	1.05
24-26 Fuel Oil (sellers' cars)	.90	.95	.95	1.00	1.02¼	1.05
28-30 Fuel Oil (sellers' cars)	1.00		1.05	1.07½	1.07½	1.10
32-36 Gas Oil	.02¾	.02⅞	.02¾	.02⅞	.02⅞	.03
36-38 Distillate	.03	.03⅛	.03	.03⅛	.03	.03⅛
38-40 Straw distillate	.03	.03⅛	.03⅛	.03¼	.03⅛	.03¼
NORTH TEXAS—						
24-26 Fuel Oil (sellers' cars)	.95	1.00	1.02½	1.05	1.10	1.15
26-30 Fuel Oil	1.00		1.07½		1.20	
32-36 Gas Oil	.02¾	.02⅞	.02¾	.02⅞	.02⅞	.03
36-38 Distillate	.03	.03⅛	.03⅛	.03¼	.03⅛	.03¼
38-40 Straw distillate	.03⅛	.03¼	.03¼	.03⅜	.03¼	.03⅜
NORTH LOUISIANA—						
18-20 Fuel Oil	.90	1.00	.90	1.00	1.00	1.05
32-36 Gas Oil	.03¼	.03½	.03¼	.03½	.03¼	.03½
ARKANSAS—						
38-40 Distillate	.03¼	.03⅜	.03¼	.03¾	.03¼	.03½
32-36 Gas Oil	.03¼	.03½	.03¼	.03½	.03¼	.03½
22-26 Refinery Fuel Oil	.90	.95	.90	.95	1.00	1.05
GULF COAST (South Texas)—						
Gas Oil	.04¾	.05	.04¾	.05	.04¾	.05
Fuel Oil	1.45	1.50	1.55	1.60	1.60	1.65
PENNSYLVANIA—						
30-34 Fuel Oil	.04¼		.04½		.04¼	
36-40 Fuel Oil	.05½		.05½		.05½	
CALIFORNIA—						
33-36 Distillate	.04¾	.05	.04¾	.05	.04¾	.05
27-33 Distillate	.04	.04½	.04	.04½	.04	.04½
15-20 Fuel Oil (at tide water)	1.60	1.65	1.60	1.65	1.60	1.65
CHICAGO DIST. (Based on Group 3)—						
24-26 Fuel Oil (sellers' cars, Group 3)	.92½	.97½	.95	1.00	1.00	1.05
18-22 (El Dorado)	.90	.95	.92½	.97½	.97	1.02
18-20 (Smackover)	.75	.80	.75	.80	.95	1.00
32-36 Gas Oil	.02⅞	.03⅛	.03	.03⅛	.03⅛	.03¼
36-38 Distillate	.03⅛		.03⅛	.03¼	.03¼	
38-40 Straw distillate	.03¼		.03¼	.03¾	.03½	

LUBRICATING OILS AND WAX

	May 5		April 28		April 21	
OKLAHOMA (Group 3)—						
Neutrals:						
70-80 vis., 2½ color, 20-25 cold test	.07	.07½	.06	.06¼	.07	.07½
100 vis., 2 color, 20-25 cold test	.08½	.09	.06¼	.06½	.08½	.09
100 vis., 3 color, 20-25 cold test	.08	.08½	.05¾	.06	.08	.08½
150 vis., 3 color, 20-25 cold test	.10½	.11	.10½	.11	.10½	.11
150 vis., 4 color, 20-25 cold test	.10¼	.10¾	.10¼	.10¾	.10¼	.10¾
180 vis., 4 color, 23-28 cold test	.10¾	.11¼	.10¾	.11¼	.10¾	.11¼
180 vis., 3 color, 23-28 cold test	.11	.11½	.11	.11½	.11	.11½
200 vis., 3 color, 23-28 cold test	.12	.12½	.12	.12½	.12	.12½
200 vis., 4 color, 23-28 cold test	.11¾	.12¼	.11¾	.12¼	.11¾	.12¼
220 vis., 3 color, 25-30 cold test	.14½	.15	.14½	.15	.14½	.15
220 vis., 4 color, 25-30 cold test	.14	.14½	.14	.14½	.14	.14½
240 vis., 3 color, 25-30 cold test	.16	.16½	.16	.16½	.16	.16½
240 vis., 4 color, 25-30 cold test	.15½	.16	.15½	.16	.15½	.16
280 vis., 3 color, 25-30 cold test	.17½	.18	.17½	.18	.17½	.18
280 vis., 4 color, 25-30 cold test	.16½	.17	.16½	.17	.16½	.17
Red Neutrals:						
180 vis., 5 color, 23-28 cold test	.10½	.11	.10½	.11	.10½	.11
180 vis., 6 color, 23-28 cold test	.10	.10½	.10	.10½	.10	.10½
200 vis., 5 color, 23-28 cold test	.11½	.12	.11½	.12	.11½	.12
200 vis., 6 color, 23-28 cold test	.11	.11½	.11	.11½	.11	.11½
220 vis., 5 color, 25-30 cold test	.13½	.14	.13½	.14	.13½	.14
220 vis., 6 color, 25-30 cold test	.13	.13½	.12	.13½	.13	.13½
240 vis., 5 color, 25-30 cold test	.15	.15½	.15	.15½	.15	.15½
240 vis., 6 color, 25-30 cold test	.14½	.15	.14½	.15	.14½	.15
280 vis., 5 color, 25-30 cold test	.15½	.16	.15½	.16	.15½	.16

REFINERY AND CRUDE PRICES

Quotations on Principal Refined Products and Crude Petroleum Markets in All the American Oil Fields

Cylinder Stocks—						
180-200 vis., S. R. green, 40-45 cold test	.09½	.10	.09½	.10	.09½	.10
190-200 vis., S. R. green, 40-45 cold test	.08½	.09	.08½	.09	.08½	.09
170-190 dark green, 40-45 cold test	.07½		.07½		.07½	
600, E filtered	.21¾		.21¾		.21¾	
190-200 vis. @ 210 "D" Bright Stock	.36		.36		.36	
200-210 vis. @ 210 "E" Bright Stock	.31		.31		.31	
150 vis. @ 210 "D" Bright Stock	.32		.32		.32	
150 vis. @ 210 "E" Bright Stock	.28		.28		.28	
Waxes:						
124-126 White Crude Scale Wax	.04¾	.05	.04½	.04¾	.04½	.04¾
PENNSYLVANIA—						
150, 3 color	.20		.19	.19¼	.19½	
180, 3 color	.21¾		.20¾		.21¾	
200, 3 color	.23¾		.22¾	.23	.23¾	
220, 3 color	.25½		.25		.25½	
600, steam refined	.17		.16½	.16¾	.18	
635, steam refined	.22½		.22½		.22½	
650, steam refined	.23½	.24	.24½	.24¾	.25	
600, Pennsylvania flash	.33		.29	.29¼	.29	
630, Pennsylvania flash	.38		.37	.37½	.38	
*550, E filtered	.23		.22¼	.22½	.23	
*600, E filtered	.25½		.24	.24¼	.25½	
600, E filtered	.23¾		.23	.23¼	.23	
600, D filtered	.30½		.29	.29¼	.29	
550, E filtered	.22½		.22	.22¼	.22	
550, D filtered	.25½		.24½	.25	.25	
Pennsylvania Bright Stock	.36½	.37	.37	.37¼	.37½	
122-124 White Crude Scale Wax	.05		.04⅞		.04⅞	
†124-126 White Crude Scale Wax	.05⅛		.05		.05	

*At Warren, Pa. †At New York City.

GULF COAST (South Texas)—						
Zero Black	.06	.07	.06	.07	.06	.07
No. 2 color, 100 vis., pale oil	.09½	.10½	.09½	.10½	.09½	.10½
No. 2 color, 150 vis., pale oil	.11	.12	.11	.12	.11	.12
No. 3 color, 200 vis., pale oil	.14	.15	.14	.15	.14	.15
No. 3 color, 300 vis., pale oil	.16	.17	.16	.17	.16	.17
No. 3½ color, 500 vis., pale oil	.18	.19	.18	.19	.18	.19
No. 3½ color, 750 vis., pale oil	.23½	.24½	.23½	.24½	.23½	.24½
No. 4½ color, 1200 vis., pale oil	.26½	.27½	.26½	.27½	.26½	.27½
No. 4 color, 2000 vis., pale oil	.30	.31	.30	.31	.30	.31
No. 2 plus color, 150 vis., pale filtered	.21½		.21½		.21½	
No. 2 plus color, 200 vis., pale filtered	.23		.23		.23	
No. 2½ minus color, 300 vis., pale filtered	.26½		.26½		.26½	
No. 2½ color, 500 vis., pale filtered	.30½		.30½		.30½	
No. 2½ color, 800 vis., filtered	.40½		.40½		.40½	
No. 5 to 6 color, 200 vis., red oil	.12½	.13½	.12½	.13½	.12½	.13½
No. 5 to 6 color, 300 vis., red oil	.14½	.15½	.14½	.15½	.14½	.15½
No. 5 to 6 color, 500 vis., red oil	.16½	.17½	.16½	.17½	.16½	.17½
No. 5 to 6 color, 750 vis., red oil	.21½	.22½	.21½	.22½	.21½	.22½
CALIFORNIA—						
130 pale, 2½-3 color	.12	.12½	.12	.12½	.12	.12½
300 vis., 2½-3 color	.15½	.16	.15½	.16	.15½	.16
300 vis., 3 -3½ color	.17	.17½	.17	.17½	.17	.17½
350 vis., 3½-4 color	.18	.19	.18½	.19	.18	.19
400 vis., 3½-4 color	.20	.20½	.20	.20½	.20	.20½
Red Neutrals:						L
200 vis., 4½-5 color	.14	.14½	.14	.14½	.14	.14½
300 vis., 5 -6 color	.15	.15½	.15	.15½	.15	.15½
400 vis., 5 -6 color	.17	.17½	.17	.17½	.17	.17½
500 vis., 4½-5 color	.20	.21	.20	.21	.20	.21
500 vis., 6 -6½ color	.18	.19	.18	.19	.18	.19
900 vis., 6½ plus color	.19	.19½	.19	.19½	.19	.19½

Note: Bright stocks are not manufactured commercially on the Pacific Coast.

NEW YORK DOMESTIC MARKET

Bayonne Refinery Prices:	May 5	April 28	April 21
U. S. Motor Gasoline, 58-60 437	.15	.15	.15
*Bunker Oil, 14-16 Be.	1.75	1.80	1.80
Diesel Oil, 28-30 Be.	2.30	2.30	2.35
Furnace Oil, New York City	.10	.10	.10
Gas Oil, 32-36 Be.	.06¾	.06¾	.06¾
41-48 Kerosene prime white	.07	.07	.06

*Lighterage, 6.5c a barrel extra.

NEW YORK EXPORT PRICES

Motor Gasoline:	May 5	April 28	April 21
58-60 Be. gravity, in cases	.29.15	.29.15	.29.15
U. S. Navy, in bulk	.15	.15	.15
Naphtha:			
60° F., 59-61 Be. gravity, in bulk	.17¾	.17¾	.17¾
60° F., 62-63 Be. gravity, in bulk	.19	.19	.19
60° F., 66-68 Be. gravity, in bulk	.20½	.20½	.20½
Kerosene:			
Standard white, 40-42 Be. grav., in bulk	.06½	.06½	.06½
Standard white, 40-42 Be. grav., in barrels	.13½	.13½	.13½
Standard white, 40-42 Be. grav., in cases	.16 9	.16 9	.16 9
Water white, 42-44 Be. grav., in bulk	.07½	.07½	.07½
Water white, 42-44 Be. grav., in barrels	.14½	.14½	.14½
Water white, 42-44 Be. grav., in cases	.17 9	.17 9	.17 9
†Lubricating Oils:			
Cylinder Stock, extra filtered, 600, barrels	.45	.45	.45
Cylinder Stock, light filtered, 600, barrels	.40	.40	.40
No. 1 white Neutral, .878 spec. grav.	.44	.44	.44
No. 5 Bright Stock, .897 spec. grav.	.47	.47	.47
Special "A" red oil, .897 spec. grav., 170 vis.	.20	.20	.20
No. 2 red oil, .903 spec. grav., 212 vis.	.21	.21	.21
No. 1 red oil, .905 spec. grav., 265 vis.	.22	.22	.22
Polar red oil, .906 spec. grav., 295 vis.	.23	.23	.23
Pale oil, "25", .899 spec. grav.	.21½	.21½	.21½
Pale oil, "28", .892 spec. grav.	.17	.17	.17
Paraffin Wax:			
120-122 a.m.p., per lb.	.06¼	.06¼	.06¼
125-127 a.m.p., per lb.	.06⅜	.06⅜	.06⅜
130-132 a.m.p., per lb.	.06¾	.06¾	.06¾
135-137 a.m.p., per lb.	.07½	.07½	.07½

†All lub prices in barrels.

LOS ANGELES EXPORT PRICES

	May 5	April 28	April 21
Kerosene water white	.05½ .06	.05½ .06	.05½ .06
U. S. Motor gasoline, 54-56, 437 end point	.10½ .11	.10½ .11	.10⅝ .11

CRUDE OIL PRICES

Arkansas and North Louisiana

Caddo, 38° and above	$2.05
35° to 37.9°	1.95
32° to 34.9°	1.85
Below 32°	1.70
Homer, 35° and above	1.80
32° to 34.9°	1.70
31° to 32.9°	1.60
Below 31°	1.45
Haynesville, 33° and above	1.70
Below 33°	1.60
El Dorado, 33° and above	1.70
Below 33°	1.60
Bull Bayou, 38° and above	1.85
35° to 37.9°	1.70
32° to 34.9°	1.55
Cotton Valley	1.00
De Soto	1.90
Crichton	1.70
Bellevue	1.75
*Stephen, Ark.:	
Below 26°	1.25
26° and above	1.45

*Posted by Atlantic Oil Producing Co.
†Smackover:
(Standard Oil Co. of Louisiana)

Below 24°	.40
24° to 24.9°	1.10
25° to 25.9°	1.20
26° to 26.9°	1.25
27° and above	1.30

†Gulf Refining Co. same as Standard except one price of .40 on below 24°.
(Posted by Texas Co.)

Below 24°	.60
24° to 25.9°	1.00
26° and above	1.30

(Posted by Atlantic Producing Co.)

Below 24°	.40
24° to 24.9°	1.10
25° to 25.9°	1.20
26° to 26.9°	1.25
27° to 27.9°	1.30
28° and above	1.30

Wyoming and Montana

Rock Creek (Wyo.)	2.00
Salt Creek	1.60
Big Muddy	2.00
Mule Creek	1.50
Grass Creek (light)	2.15
Elk Basin	2.15
Lance Creek	2.15
Osage	2.15
Cat Creek (Mont.)	2.15
Sunburst (Mont.)	1.40
Lost Soldier	1.28
Greybull and Torchlight	2.00
Hamilton Dome	1.60
Hogback, N. Mex.	2.20

Lost Soldier and Lander based on contracts.

Oklahoma, Kansas North and Central Texas

Prairie Oil & Gas Co. and other major purchasing companies, except as noted:

Below 30°	1.35
30° to 32.9°	1.55
33° to 35.9°	1.80
36° to 38.9°	2.00
39° to 41.9°	2.25
42° and above	2.35

Sinclair Crude Oil Purchasing Co.—

39° to 41.5°	2.25
41.6° and above	2.35

Magnolia Petroleum Co.:

Below 28°	1.00
28° to 30.9°	1.35
31° to 32.9°	1.55
Corsicana light	2.00
Corsicana heavy	1.00
Mexia and Wortham	2.00

California

14° to 19.9°	1.25
20° to 20.9°	1.27
21° to 21.9°	1.30
22° to 22.9°	1.33
23° to 23.9°	1.36
24° to 24.9°	1.40
25° to 25.9°	1.44
26° to 26.9°	1.48
27° to 27.9°	1.52
28° to 28.9°	1.56
29° to 29.9°	1.60
30° to 30.9°	1.64
31° to 31.9°	1.68
32° to 32.9°	1.72
33° to 33.9°	1.76
34° to 34.9°	1.80
35° and above	1.85

Rosecrans-Athens Field, only:

Below 35.9° gravity, same as other fields.	
36° to 36.9°	1.92
37° to 37.9°	2.00
38° to 38.9°	2.08
39° to 39.9°	2.16
40° to 40.9°	2.24
41° to 41.9°	2.32
42° and above	2.40

Humble Oil & Refining Co.

Powell, Currie, Richland	2.00
Mexia and Wortham	2.00
Moran crude:	
Below 30° gravity	1.35
30° to 32.9°	1.55
33° to 35.9°	1.80
36° and above	2.00

Ranger and North Texas, same as Prairie.

Gulf Coast

Grade A	1.75
Grade B	1.50
Luling (based on contracts 90c and	1.15
Laredo (Magnolia Petroleum Co.)	.85
Rockdale-Minerva (Milam County)	1.25
Calliham (Live Oak-McMullen)	1.15
Webb, Jim Hogg, Zapata	1.00
*High Island	1.20

*Posted by Sun Oil Co.

***Somerset**

Below 30°	1.25
30° to 32.9°	1.35
33° to 35.9°	1.80
36° to 38.9°	1.95
39° to 41.9°	2.10
42° and above	2.35

*Posted by Grayburg Oil Co.

Eastern States

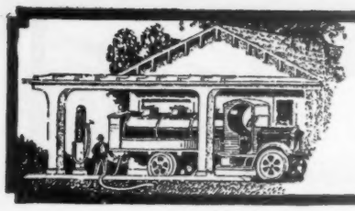
Penna Grade Oil in New York Transit Lines	3.40
Bradford District Oil in National Transit Lines	3.40
Penna Grade Oil in National Transit Lines	3.30
Penna Grade Oil in Southwest Pa. Pipe Lines	3.30
Penna Grade Oil in Eureka Pipe Line Lines	3.25
Penna Grade Oil in Buckeye Pipe Lines	3.15
Cabell Grade Oil in Eureka Pipe Line Lines	2.05
Corning Grade Oil in Buckeye Pipe Line Lines	1.95
Somerset Medium Oil in Cumberland Pipe Line Lines	2.15
Somerset Light Oil in Cumberland Pipe Line Lines	2.30
Ragland Grade Oil in Cumberland Pipe Line Lines	1.20
Gaines	3.15
Lima	2.23
Wooster	2.15
Illinois	2.02
Indiana	2.03
Princeton	2.02
Plymouth	1.55
Waterloo	1.10
†Oil Springs, Canada	2.95
†Petrolia, Canada	2.88
*Western Kentucky, 36° and above	2.05
*Western Kentucky, 33° to 35.9°	1.95
*Western Kentucky, 32.9° and below	1.85
Cumberland, Barren and Monroe Counties (Kentucky), (Paragon Development Co.)	2.30

†Plus Government bounty of 26½c.
*Prices for Warren, Allen, Hancock, Simpson and Ohio Counties by Indian Refining Co.

Mexican Crude

*Tuxpam (f.o.b. Mexican ports)	1.35
†Panuco (f.o.b. Mexican ports)	1.25
Tuxpam (New York)	1.99
Panuco (New York)	1.76

*Plus 33.00c tax. †20.00 tax.



TANK WAGON MARKETS

Tank wagon quotations for gasoline and kerosene in United States as furnished by the large marketing concerns, May 5.

ALL TANK WAGON AND SERVICE STATION QUOTATIONS INCLUDE TAXES

SOUTHERN DISTRICT

Standard Oil Co. (Kentucky)

	Gasoline			Kero.
	Tank wagon	Service Station	Incids tax of	Tank wagon
Atlanta, Ga.	23.0	26.0	3.0	13.0
Augusta	23.0	26.0	3.0	16.0
Macon	23.0	26.0	3.0	14.5
Savannah	21.0	24.0	3.0	13.0
Birmingham, Ala	21.0	24.0	2.0	14.5
Mobile	20.0	23.0	2.0	12.5
*Montgomery	22.0	25.0	3.0	16.5
Clarksdale, Miss.	21.0	24.0	3.0	12.0
Jackson	21.0	24.0	3.0	10.0
Natchez	20.5	23.5	3.0	11.5
Vicksburg	20.5	23.5	3.0	11.5
Jacksonville, Fla.	21.0	24.0	3.0	13.0
Miami	23.0	26.0	3.0	14.5
Pensacola	21.0	24.0	3.0	13.5
Tampa	21.0	24.0	3.0	13.0
Lexington, Ky.	21.0	24.0	3.0	14.0
Covington	19.0	22.0	3.0	14.0
Louisville	21.0	25.0	3.0	12.0

*In addition to the State tax of 2 cents on gasoline, Montgomery has city tax of 1 cent on gasoline and ½ cent on kerosene.

SOUTHWESTERN DISTRICT

Magnolia Petroleum Co.

	Gasoline			Kero
	Tank wagon	Service station	Incids tax of	Tank wagon
Dallas, Texas	17.0	21.0	1.0	120.
Fort Worth	17.0	21.0	1.0	12.0
Houston	17.0	21.0	1.0	12.0
San Antonio	15.0	18.0	1.0	12.0
El Paso	18.0	21.0	1.0	13.0
Muskogee, Okla.	18.5	21.5	3.0	12.0
Oklahoma City	19.5	22.5	3.0	12.0
Tulsa	18.5	21.5	3.0	11.0
Ft. Smith, Ark.	22.0	25.0	4.0	12.0
Little Rock	22.0	23.0	4.0	10.0
Texarkana	19.0	22.0	1.0	12.0

ROCKY MOUNTAIN DISTRICT

Continental Oil Co.

	Gasoline			Kero
	Tank wagon	Service station	Incids tax of	Tank wagon
Casper, Wyo.	21.5	23.5	2.5	13.0
Cheyenne	23.0	25.0	2.5	14.5
Albuquerque, N. M.	26.5	29.5	3.0	16.5
Salt Lake, Utah	24.0	26.0	3.5	18.0
Denver, Colo.	21.0	23.0	2.0	14.5
Pueblo	21.0	23.0	2.0	14.5
Butte, Mont.	23.0	25.0	2.0	16.0
Helena	25.0	27.0	2.0	17.0
Boise, Idaho	24.5	26.5	3.0	20.0

NEW YORK AND PART OF NEW ENGLAND DISTRICT

Standard Oil Co. (New York)

	Gasoline			Kero
	Tank wagon	Service station	Incids tax of	Tank wagon
Albany, N. Y.	20.0	...	..	13.0
*New York	20.0	...	..	13.0
Buffalo	20.0	...	..	12.0
Rochester	20.0	...	..	13.0
Syracuse	20.0	...	..	12.0
Boston, Mass.	20.0	...	..	13.0
Providence, R. I.	20.0	...	..	13.0
Augusta, Me.	21.0	...	1.0	13.0
Manchester, N. H.	22.0	...	2.0	13.0
Burlington, Vt.	21.0	...	1.0	13.0

*Price in steel barrels.

Note: Standard Oil Co. of New York does not generally quote service station price in its territory. In most cases the service station price is 2 or 3 cents higher than tank wagon price.

PACIFIC COAST DISTRICT

Standard Oil Co. of California

	Gasoline			Kero
	Tank wagon	Service station	Incids tax of	Tank wagon
San Francisco	17.0	20.0	2.0	16.5
Los Angeles	15.5	18.5	2.0	16.5
Fresno	17.5	20.5	2.0	19.5
Reno, Nev.	20.5	23.5	2.0	19.0
Portland, Ore.	18.0	21.0	3.0	16.5
Seattle, Wash.	17.0	20.0	2.0	16.5
Tacoma	17.0	20.0	2.0	16.5
Spokane	21.0	24.0	2.0	20.5
Phoenix, Ariz.	23.0	26.0	3.0	21.5

OHIO

Standard Oil Co. (Ohio)

	Gasoline			Kero
	Tank wagon	Service station	Incids tax of	Tank wagon
All Ohio points	20.5	22.5	2.0	15.0

NEBRASKA

Standard Oil Co. (Nebraska)

	Gasoline			Kero
	Tank wagon	Service station	Incids tax of	Tank wagon
Omaha	18.0	20.0	2.0	12.5
Crawford	21.0	...	2.0	13.25
McCook	21.75	23.75	2.0	14.0
Norfolk	20.75	22.75	2.0	13.0
North Platte	21.75	23.75	2.0	13.75
Scotts Bluff	21.25	23.25	2.0	13.25

STANDARD OIL CO. (INDIANA)

Main Service Station Price

	Gasoline			Kero
	Tank wagon	Service station	Incids tax of	Tank wagon
Chicago Dist—				
†100 gals or more	17.0	20.0	..	12.0
Decatur, Ill.	18.2	20.2	..	12.5
East St. Louis	17.1	19.35	..	11.6
Joliet	18.4	20.4	..	12.7
Peoria	18.2	20.2	..	12.5
Quincy	18.2	20.2	..	12.3
Davenport, Ia.	20.5	22.5	2.0	12.9
Des Moines	20.5	22.5	2.0	12.9
Keokuk	20.5	22.5	2.0	12.9
Sioux City	20.0	22.0	2.0	12.5
Duluth, Minn.	21.5	23.5	2.0	13.6
Minneapolis	21.2	23.2	2.0	13.6
La Crosse, Wis.	21.2	23.2	2.0	13.4
Milwaukee	20.1	22.1	2.0	12.3
Madison	20.3	22.3	2.0	12.5
Detroit, Mich.	20.8	22.8	2.0	13.2
Grand Rapids	20.7	22.7	2.0	13.1
Saginaw	20.9	22.9	2.0	13.3
Evansville, Ind.	21.0	23.0	3.0	12.5
Fort Wayne	21.4	23.4	3.0	12.9
Indianapolis	21.2	23.2	3.0	12.7
South Bend	21.4	23.4	3.0	12.9
Fargo N. D.	20.9	22.9	1.0	15.6
Huron, S. D.	18.0	20.0	3.0	14.1
Sioux Falls	20.5	22.5	3.0	13.6
*Kansas City, Mo.	20.9	22.9	3.0	11.3
*Springfield	20.8	22.8	3.0	12.2
*St. Louis	19.6	21.9	2.5	12.0
*St. Joseph	20.0	22.0	2.5	11.9
Wichita, Kans.	19.8	21.8	3.0	10.8
Bartlesville, Okla	19.9	21.9	3.0	10.9

*State tax is 2c. Remainder is city tax.
†Tank wagon price on less than 100 gallons, 18.0

ATLANTIC COAST DISTRICT

Standard Oil Co. (New Jersey)

	Gasoline			Kero
	Tank wagon	Service station	Incids tax of	Tank wagon
Newark, N. J.	17.0	19.0	..	12.5
Atlantic City	17.0	...	..	12.5
Annapolis, Md.	20.0	...	2.0	11.5
Baltimore	19.0	21.0	3.0	11.0
Cumberland	20.0	22.0	3.0	12.0
Washington, D. C.	19.0	21.0	3.0	12.0
Norfolk, Va.	21.0	23.0	3.0	13.0
Petersburg	21.0	...	3.0	13.0
Danville	21.0	...	3.0	13.0
Richmond	21.0	23.0	3.0	13.0
Roanoke	21.0	23.0	3.0	13.0
Keyser, W. Va.	20.0	...	2.0	13.0
Charleston	19.0	21.0	2.0	13.0
Parkersburg	19.0	21.0	2.0	13.0
Wheeling	19.0	21.0	2.0	13.0
Charlotte, N. C.	22.0	24.5	4.0	14.0
Hickory	22.0	...	4.0	14.0
Mt. Airy	22.0	...	4.0	14.0
Salisbury	22.0	...	4.0	14.0
Charleston, S. C.	23.5	26.0	5.0	14.5
Columbia	23.5	26.0	5.0	14.5

PENNSYLVANIA-DELAWARE AND PART NEW ENGLAND

Atlantic Refining Co.

	Gasoline			Kero
	Tank wagon	Service station	Incids tax of	Tank wagon
*Pittsburgh, Pa.	19.0	24.0	..	14.0
*Philadelphia	19.0	24.0	..	14.0
*Scranton	19.0	24.0	..	14.0
*Allentown	19.0	24.0	..	14.0
*Altoona	19.0	24.0	..	14.0
*Erie	19.0	24.0	..	14.0
Dover, Del.	21.0	24.0	2.0	14.0
Wilmington	21.0	24.0	2.0	14.0
Springfield, Mass.	20.0	24.0	..	13.0
Worcester, Mass.	20.0	24.0	..	13.0
Boston	20.0	24.0	..	11.0
Providence, R. I.	20.0	24.0	..	13.0
Hartford, Conn.	21.0	25.0	1.0	12.0
New Haven, Conn.	21.0	25.0	1.0	13.0

*Pennsylvania tax of 2 cents is collected by the dealer and paid by him direct to the State.

CENTRAL SOUTH DISTRICT

Standard Oil Co. (Louisiana)

	Gasoline			Kero.
	Tank wagon	Service station	Incids tax of	Tank wagon
New Orleans	18.5	20.5	2.0	11.0
Alexandria	18.5	20.5	2.0	12.0
Baton Rouge	17.0	19.0	2.0	10.5
Lake Charles	18.5	20.5	2.0	12.0
Shreveport	18.5	20.5	2.0	11.0
Memphis, Tenn.	19.0	21.0	3.0	13.0
Chattanooga	20.5	22.5	3.0	13.5
Knoxville	21.5	23.5	3.0	14.5
Nashville	20.5	22.5	3.0	12.5
Bristol	21.0	23.0	3.0	13.5
Little Rock, Ark.	21.0	23.0	4.0	10.0

TANK WAGON CHANGES

May 1.—Standard of Indiana increased its tank wagon and service station price of gasoline at all Minnesota and Kansas points to cover 2 cents gasoline taxes which went into effect in these States.

May 5.—The Texas Co. reduced the gasoline tank wagon price 2 cents a gallon in New York City, Stamford, Conn., and Springfield, Mass. No other company had met the reduction late this date.

OKLAHOMA REFINED MARKET TONE FIRMER

(Continued from Page 20)

direct effect it is conceded the production figures have a lot to do with the morale and tone of the refined market. Production of light oil this last week reached a new low point for the year, declining 7,474 bbls. from the previous week. This represents a decline of more than 115,000 bbls. daily from the week ending January 17. Oklahoma alone showed a production decline this last week of approximately 10,000 bbls.

In forecasting the refined market, it is realized that this production decrease as well as the increase in runs to stills will have to be taken into consideration as being very important factors.

Another indication that consumption of gasoline is increasing, which will have a bearing on the refined market, lies in the inspection figures for Oklahoma. The State Oil and Gas Conservation Bureau in its report, announced this week, reveals that 12,658,510 gallons of gasoline were inspected during March, an increase of 4,320,000 gallons over March of last year. Inspections during February totaled 5,000,000 gallons more than those during February of 1924.

Kerosene also showed an upward trend, according to the report. During March, 2,483,687 gallons were inspected, which was a large increase over kerosene inspected in the same month of 1924. Gasoline inspections for entire past year totaled 150,000,000 gallons while 32,000,000 gallons of kerosene were inspected.

Gasolines and Naphtha

While the 58-60, 437 (U. S. Motor) gasoline advance led the gasoline and naphtha division of the refined market, the strengthening effect was felt in all other grades. Last week there was some 56-58, 450 gasoline available as low as 9¾ cents but this was believed to have disappeared early this week, 10 cents being the absolute bottom. Some naphtha (50-52, 450) still could be obtained for 9¾, it being quoted at 9¾ to 10 cents. The U. S. Motor gasoline advanced a quarter cent, being quoted Tuesday at 10½ to 10¾ cents.

While there were no material advances in prices of higher gravity gasolines, nevertheless all grades were strong at their quotations. The 60-62, 400 gasoline, despite its comparative inactivity during the week, still held firm at 11½ to 11¾ cents. The 64-66, 375 grade was particularly scare Tuesday and was bringing for domestic trade 12¾ to 13 cents, although some might be bought as low as 12½ cents. The 68-70, 350 gasoline was still at 13 to 13¼ cents.

Kerosene and Distillates

The first change in the kerosene prices in several weeks was felt this week when the market advanced one eighth cent. This advance was brought about despite the fact that little activity was reported. Buyers, who have been able to get 41-43 water while kerosene easily for 4 cents Monday and Tuesday find they can not get any for under 4¼ cents, the market being quoted at 4⅛ to 4¼ cents. The 4¼ cents 42-44 water white, which has been fairly free, also has disappeared from the market, which now is at 4¼ to 4½ cents. The 40-41 prime white kerosene still is available at its old figure of 3¾ to 4 cents.

Distillates, on the other hand, softened during the week with many price concessions being made. Distillates have been weak all along but the prices have been changed only little. Both the 36-38 distillate and the 38-40 straw grade could be obtained for 3 cents Tuesday.

Natural Gasoline and Blends

The popularity of Grade C has been one of the features of the natural gasoline market. Its meteoric climb from 7 cents to 9¾ cents in the last three weeks has been particularly outstanding. The increase has been far greater than in other grades of natural gasoline, although all are strong. Grade A and Double A are moving well at 10¼ to 10½ cents, a quarter to a half cent advance over the previous week. Grade B, which shows the smallest change, is quoted at 9¾ to 10 cents although it is hard to find at any price. There has been little of interest in the blend market but the prices are strengthening in sympathy with advances in natural gasolines and straight runs. The market apparently is 10 to 10¼ cents.

Fuel and Gas Oils

Although further weakening was felt in fuel oil prices, the actual reductions were slighter this week than they have been since the fuel oil market broke. Despite anticipated cuts, few sales in Group 3 were being made under 90 cents, which was the bottom last week. The bulk of the weakening was felt in the 24-26 and the 28-30 grades. The former is being quoted at 90 to 95 cents, a 5-cent cut from the previous week's figures, while the 28-30 is $1 to $1.05. Little change is felt in the gas oil (32-36) market, it still being quoted at 2¾ to 2⅞ cents. Although the gas oil market is known to be very soft, sales of the product at 2¾ cents are believed to be few and far between.

Lubricants and Wax

Increased activity in eastern markets has placed wax on a strong footing in Oklahoma. The product for the last several weeks has had a steady climb and now is quoted at 4¾ to 5 cents. Movement of wax from Group 3 is particularly strong. Lubricants, including neutrals, cylinder stocks and bright stocks are unchanged but a fair movement continues.

REAGAN COUNTY FIELD MODEL IN CONSERVATION

SAN ANGELO, Tex., May 2.—Natural resources are being well conserved in wells in the Reagan County oil field, conditions there being termed satisfactory by H. E. Bell, of Austin, chief supervisor of the oil and gas division of the Texas Railroad Commission. Judge Bell was in San Angelo inspecting the Reagan Field in company with John Hoffer, deputy supervisor of the oil and gas division, who has charge of 50 West Texas counties and makes headquarters in San Angelo.

"The Reagan Field is unique in that two companies so far control production and development has been steady and orderly without the mad scramble that has characterized other fields in Texas, Wortham for example," said Judge Bell. "The law provides that wells cannot be drilled closer than 150 feet to boundary lines which means that they must be 300 feet apart, unless special permission for closer drilling is given. In Reagan County the line tests are 330 feet from the lines or 660 feet apart. If such drilling does not get all the oil, the companies later can drill nearer the lines."

COMPANIES INCREASE CAPITAL

DOVER, Del., May 2.—Gardner Petroleum Co., Tulsa, Okla., has increased capital stock to 500,000 shares of no par from 300,000 shares. Carib Royalties Corp. has increased its stock to 500,000 shares of no par from 100,000.

SINCLAIR OILS

THE SINCLAIR dealer is more than merely a customer of the Sinclair Refining Company. With each sale to him there goes the assurance of our help in his own selling problems, whenever he requests it. He is related to us as one Sinclair Department is to another.

The rapid growth of the Sinclair Refining Company is due largely to our close alliance with dealers. We can only grow as Sinclair dealers grow.

SINCLAIR REFINING COMPANY

NEW YORK
Sinclair Oil Bldg., 45 Nassau St.
Telephone: Rector 9320

CHICAGO
22nd and Rockwell Streets
Telephone: Crawford 2000

Cable Address: "Lucent"

ISENHOWER POOL IN TEXAS UNIQUE POOL

(Continued from Page 23)

two broad level plateaus, between which is a wide valley. It is down this valley that Battle Creek meanders. Standing on the crest of the hill looking across to the newly acquired Texas Co. property, one can get as pretty an oil field view as could be desired, the machines rearing their heads above the mesquite trees to take the place of the familiar derricks.

Tractors Used for Power

All of the drilling has been done with Fort Worth and Armstrong spudders. There hasn't been a rig in the field. Tractors are used for power, burning gasoline or kerosene. One string of 6⅝-inch casing is strung to the top of the oil sand and the job is done in from three to seven days. The record in the field is two and a half days. A familiar routine for some concerns there is to drill one well a week. They start on Monday, drill in Thursday, pump it with the machine Friday and Saturday, rest on Sunday, change cups and put it on power Monday and then start another one.

No shooting has been employed as yet. Instead of shooting in some holes where oil showings have been encountered, the spudder has been moved over to another location and a new hole dug. You know the old story about the man with the peg leg who was fired because every time he walked across the lease he brought in a batch of new wells, and they couldn't handle the production. Well, his grandson was fired the other day at Putnam for about the same reason. Grasshoppers kick them down out there.

Gravity of the oil varies from 40.2 degrees to 40.6 degrees. It is being run by The Texas Co. to its Moran lines.

Following is the estimated daily average production of various companies in the field a week ago:

	Bbls.
The Texas Co.	1,100
Goodloe & Harris	400
Evans & Halstead	300
Sirmans Oil Co.	250
Moutray Oil Co.	400
Nichols & Keys	200
George Nichols	150
Ilseng & Trammel	90
Morrison-St. John & Kleiner	225
Others (Godley Oil Co.; Kennedy & Taylor; Dickey Bros.; Curtis et al.)	200
Total	3,315

Throckmorton County

A new county entered the ranks of prospective oil areas Sunday, April 19, when the Reiter-Foster Oil Corp.'s No. 1 J. L. Stubblefield in the southeastern corner of Throckmorton County started flowing with the bottom of the hole at 2,985 feet, just barely touching the pay sand.

This is the first oil well really worth talking about that has ever been drilled in Throckmorton County, and it will assure an active drilling campaign for that county. In fact, the play was rapidly becoming active there before this well came in but had met with considerable discouragement.

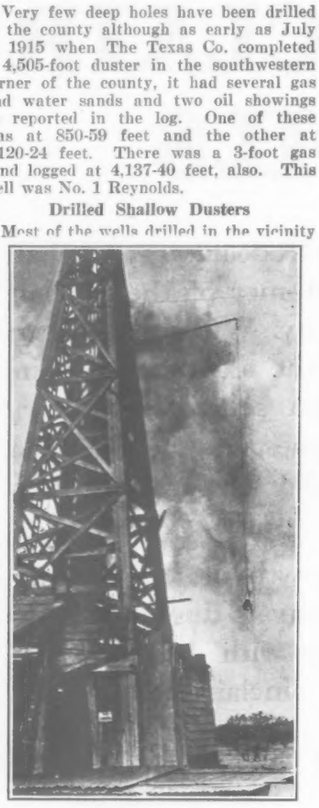
The Reiter-Foster well is a south offset to one drilled by the Humble Oil & Refining Co. last year. The Humble well was a small producer, amounting to about 50 bbls. in a lower sand than that which is yielding the oil in the Reiter-Foster test. It had a showing in the 2,985-foot sand but was in good shape to go on down and try to find something below, which it did, at 3,194-97 feet. The showing was sufficient for the drilling of the second well which was begun in January of this year.

In the opinion of many close observers in North Texas, these two wells indicate that the experience of Archer County and other areas will be repeated in Throckmorton County and that several pools are likely to be found there in the coming months.

Very few deep holes have been drilled in the county although as early as July of 1915 when The Texas Co. completed a 4,505-foot duster in the southwestern corner of the county, it had several gas and water sands and two oil showings as reported in the log. One of these was at 850-59 feet and the other at 4,120-24 feet. There was a 3-foot gas sand logged at 4,137-40 feet, also. This well was No. 1 Reynolds.

Drilled Shallow Dusters

Most of the wells drilled in the vicinity



North Texas operators were treated to the unusual sight, in that area, of a well flowing over the top of the derrick when Reiter-Foster's No. 1 Stubblefield got busy.

of the Reiter-Foster and Humble producers have been shallow dusters. The Hale-Tex Oil Co. put one down to 945 feet on its Elliott lease, 1¾ miles northwest, and the same concern also drilled one to 972 feet on the J. H. Lee farm, 1¼ miles southeast of the new producer.

A 50,000,000-foot gasser was completed August 21, 1923, in the northwest corner of Section 2362, a few miles east of the new producer, in sand at 821-26 feet, and has provided fuel for drilling both the Humble and Reiter-Foster wells.

Last December, Larkin and others brought in a very small shallow well about 5 miles to the west of the present wells. It was on the Conger farm and made 10 bbls. from sand at 1,424-29 feet. Previous to that, in April of 1924, Adams & Kincaid's No. 1 Reynolds Ranch in Co-Ord. D-6, was good for 6 bbls. in sand at 949-50 feet. Richardson and others' No. 1 Reynolds was a 10-bbl. well at 930-42 feet in Jenuary, 1924.

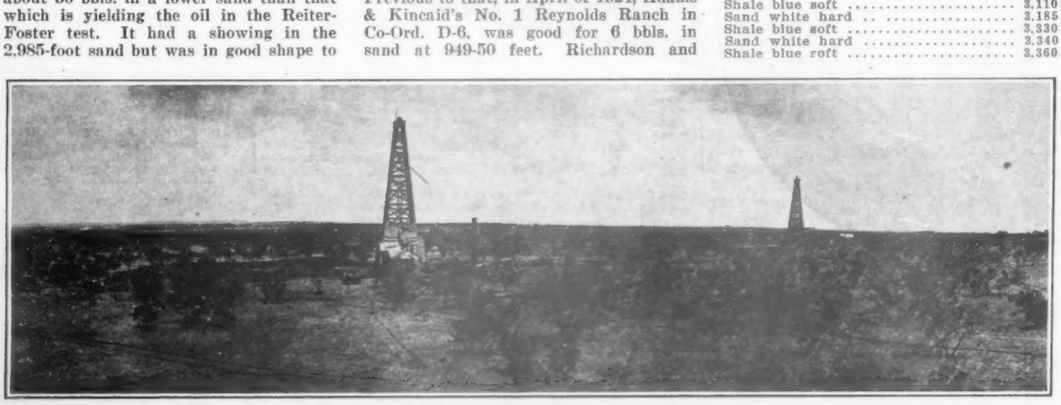
The deepest hole in the southeastern part of the county, and one of the few deep wells in the whole of Throckmorton County, was the Prairie Oil & Gas Co.'s No. 1 O. J. Wood, in Section 2226, Premium Surveys. It was completed October 15. 1920, as a failure at 3,940 feet. It is about a mile southeast of the little town of Woodson and the log of it appears at the end of this article.

For the benefit of those outside of the State who may not have a map of Texas handy, Throckmorton County is bounded on the east by Young County and on the south by Stephens and Shackelford counties. Woodson, which is now the proud possessor of an "oil exchange," by the way, is about 24 miles northwest of Breckenridge. The two deep producers are some 3 or 4 miles northeast of Woodson.

Log of Prairie Well

Following is a log of the Prairie well in Section 2226, mentioned above:

Soil black soft	2
Sandstone red soft	8
Mud blue soft	28
Sand rock white hard	38
Clay blue roft	48
Lime white hard	50
Sand white hard	55
Lime white hard	60
Shale blue soft	75
Lime shale	80
Shale blue soft	90
Shell gray hard	95
Sand white hard	100
Shale blue soft	105
Lime white hard	115
Shale blue soft	130
Shale red soft	215
Shale blue soft	220
Shell gray hard	225
Red rock soft	265
Lime blue hard	268
Shale blue soft	285
Sand white soft	300
Red rock soft	310
Shale blue soft	340
Sand white hard	350
Shale blue soft	355
Sand white soft	390
Shale blue soft	410
Sandy shale	430
Sand dark soft	435
Sand white roft	480
Sand white soft	490
Shale blue soft	555
Sand brown soft	580
Shale blue soft	600
Lime white hard	630
Shale blue soft	755
Sand white soft	770
Shale blue soft	855
Lime white hard	860
Slate blue soft	901
Red rock soft	876
Lime white hard	906
Sand white soft	921
Shale blue soft	1,015
Sand white soft	1,040
Lime white hard	1,045
Shale blue soft	1,085
Lime white hard	1,090
Sand white soft	1,100
Shale blue soft	1,165
Lime white hard	1,170
Sand white soft	1,195
Shale blue soft	1,240
Lime white hard	1,245
Shale blue soft	1,280
Lime white hard	1,290
Shale blue roft	1,340
Red Rock soft	1,375
Lime white hard	1,390
Shale blue soft	1,490
Sand white soft	1,505
Shale blue soft	1,510
Sand white soft	1,525
Shale blue soft	1,610
Sand white soft	1,640
Sandy shale soft	1,760
Shale blue soft	1,800
Lime white hard	1,810
Sandy shale soft	1,980
Sand white hard	2,010
Shale blue soft	2,100
Lime white hard	2,165
Sand white hard	2,255
Shale blue soft	2,530
Lime white hard	2,570
Shale blue soft	3,070
Sand white hard	3,095
Shale blue soft	3,110
Sand white hard	3,185
Shale blue soft	3,330
Sand white hard	3,340
Shale blue roft	3,360
Sandy shale	3,440
Shale blue soft	3,470
Sand white hard	3,475
Shale blue soft	3,710
Shale black soft	3,900
Sandy shale brown soft	3,870
Shale black soft	3,870
Sand white hard	3,920
Shale blue soft	3,935
Shell white hard	3,935
Lime and shale black hard	3,940



The Reiter-Foster's No. 1 Stubblefield, a south offset to the Humble Oil & Refining Co.'s well drilled a year ago, which has attracted so much attention to Throckmorton County, Texas.

IMPROVEMENTS IN NEW DEPHLEGMATORS

(Continued from Page 125)

not only divided into different streams but also continue their way through a rain of condensates. The working is more efficient than with coolers hitherto known because there are no baffleplates, thus enabling the vapors to come into close contact with the cooling surfaces. Attention must be paid to the fact that the vapors which escape through the central aperture 25 are inclined to follow the way with the smallest resistance. The number of tubes to be passed at the sides being less than at the middle, the vapors could rise along the side portions of the compartment c. This is, however, prevented by the baffles 33 (see Figure 2), the most efficient spacing of which can be determined by experiment.

The heavier vapors formed by the heavy oil gases and steam condense in this cooler and fall back on the plate 24 and through the opening 25 to the dish 30 and further through the pipes 31 and 32 to the bottom of the dephlegmator. The condensates having arrived at the bottom, the oil will float upon the water so that on the water in the curved open leg of the U-shaped tube 26 there is a thin film of oil. In the curve of the tube is the opening 35 for the outlet of the condensate. The quantity of the condensate becoming larger, the level of the water in the curved open leg will rise correspondingly, whereas the column of liquid outside will rise to a greater height, because always more oil will fall down upon the water. Finally the mixture of oil and water will flow off through the U-shaped tube to a cooler.

The vapors which have passed the cooling compartment c arrive through the pipe 21 in the compartment b where they encounter the dish 14. Further they pass through the apertures in the dish 14 and the aperture in the plate 13 to the cooling compartment a which works in the same way as the cooling compartment c. The vapors, which are not condensed in the cooling compartment a pass through the outlet 11 to a siphon cooler.

The plate 20 does not possess apertures and can be considered as the bottom of the coolers with the exception of the lowermost cooler. The lightest substances of the condensate remaining therein can again be vaporized by means of steam. The condensate can pass through the outlet 19 to a cooler.

By regulating the steam and watercocks the production of certain distillates can efficiently be controlled, that is, by using a greater quantity of cooling water the heavier substances of the mixture will condense, whereas from the distillate the lighter substances can be vaporized by indirect heating by means of steam. Thus the quality of the products can be controlled and the composition is subjected to the will of the distiller.

An important advantage of the application of the dephlegmators according to the invention consists in the economizing of fuel because the quantity of redistillate gasoline is very small. The still which are employed for the redistillate tanks can be put out of use, whereas less transfers are needed and in consequence the steam pumps will consume less steam. The idle redistillate tanks eventually may be used for the treating of crude oil thus augmenting the capacity of the refinery. Although the dephlegmator described above is especially adapted for still-batteries, it can also be used successfully for condensing the vapors provided by tube furnaces. In that case dephlegmators of simpler construction may be employed.

With Shell Still Unit

The combination of Mr. Brandon's dephlegmator with a shell still unit is illustrated clearly in Figure 3. The de-

phlegmator is connected with a condensor 2 and with two distillate coolers 3. The pipes 6 and 7 are connected with the shell still and with the coolers 3 by means of the pipes 8, 9, 10 and 11, so that the distillates from the dephlegmator may be returned into the shell still or may be led into the coolers 3 to be cooled.

By using my dephlegmator in combination with a shell still, three different fractions may be obtained easily.

This combination works as follows:

The vapors from the shell still flow through the vapor pipe 4 into the lower compartment of the dephlegmator. Every desired product can be obtained in this compartment of the dephlegmator by increasing or decreasing the velocity of the cooling medium. The distillate obtained may be led into one of the coolers 3 by means of the pipes 7 and 11 or may be returned into the shell still by means of the pipes 7 and 9, in case the distillate requires redistillation.

The other vapors flow into the upper compartment of the dephlegmator and a certain distillate may be obtained by regulating the velocity of the cooling medium. This distillate may be led into the second cooler 3 by pipes 6 and 10 or may be returned into the shell still by pipes 6 and 8. The remaining vapors, which are the lightest flow through the vapor pipe 5 into the condensor 2, which is cooled by water. The distillates from the coolers 3 and the condensor 2 are led through the run pipes 13, 14, and 12 to the tailbox.

The combination of the Brandon dephlegmator and a vapor separating chamber of the tube furnace is illustrated in Figure 4. In this case four dephlegmators are used, each producing two fractions with a total of nine fractions for the whole combination. The number of dephlegmators used may be increased or decreased.

The dephlegmators are connected by vapor pipes 5. The first dephlegmator is connected with the vapor separating chamber 10 by the vapor pipe 4, while the last dephlegmator is connected with a condensor 2 by the vapor pipe 5. Each dephlegmator is provided with two distillate coolers 3.

This combination works as follows:

The vapors from the vapor separating chamber of the tube furnace flow through the vapor pipe 4 into the first dephlegmator, second, third and fourth dephlegmator successively until they reach the condensor 2. By regulating the velocity of the cooling medium in the dephlegmators every fraction desired may be obtained. The distillates obtained in the dephlegmators flow into the distillate coolers and after being cooled flow through the run pipes to the tail boxes.

GULF COAST

(Continued from Page 46)

Vacuum Oil Co.'s No. 8 Barrett is rigging, No. 9, drilling at 2,844 feet.

Other Pools

In the Humble Pool, Bennett and Woods' No. 2 Cherpit, is pumping 60 bbls. at 1,100 feet. The Kane Production Co. abandoned No. 2 on the north side of the San Jacinto River and making a location for No. 3. The Southern Petroleum Co.'s No. 43 Landslide is drilling 1,343 feet.

In the Batson Pool, the Ada Belle Oil Co.'s No. 94 Davis is bailing at 1,025 feet. The East Batson Oil Co.'s No. 13 State land, is drilling at 706 feet and the Paraffine Oil Co.'s No. 40 Fee, is 545 feet.

In the new deeper sand section on the north side of the Saratoga Pool, the Gulf Production Co.'s No. 1 Wells, is around 2,670 feet. The Rio Bravo Oil Co.'s No. 1 Fountain is at 2,505 feet and No. 2 around 2,655 feet. The Yount-Lee Oil Co.'s No. 1 Parrish is below 3,230 feet. The Weldon Oil Co.'s No. 5 Barclay is drilling at 1,155 feet and Paggi Brothers Oil Co.'s No. 2 Booker below 900 feet with No. 3 Hannah rigging up. The Sun Oil Co.'s No. 64 Williams is pumping 20 bbls. at 1,170 feet.

The Stella Oil Co.'s No. 18 Hogg-Swayne in the Spindletop Pool is drilling at 905 feet.

In the West Columbia Pool, the Humble Oil & Refining Co.'s No. 12 Tyndale-Wyoming, is pumping 15 bbls. at 370 feet. Casing has been set in No. 13 at the same depth. Company is rigging No. 2 Wilson. The Hyde Production Co.'s No. 1 Lee, is at 1,344 feet.

In the Blue Ridge Pool, the Gulf Production Co.'s No. 8 Luscher, is at 3,923 feet. It is rigging No. 11-C Blakely and The Texas Co. has a location for No. 13 Robinson.

In the Pierce Junction Pool, Snowden & McSweeney's No. 8 Cain, is rigging. The Texas Exploration Co.'s No. 7 Dooley is around 3,760 feet. H. R. Cullen and others' No. 6 Howe is drilling around 3,900 feet.

In the Markham Pool, Stewart and McCarthy's No. 1 Cherry, is at 2,030 feet, drilling in gyp and will probably go into rock salt. The Rycade Petroleum Corp.'s No. 2 Gray is drilling around 3,800 feet.

South Louisiana Pools

In the Lockport district, near Lake Charles, the Marland Oil Co.'s No. 1 Government, is below 4,850 feet with a derrick for No. 1 Phoenix. The Vacuum-Gulf Co.'s joint No. 2 Miller, is at 4,235 feet and No. 3 Miller around 3,245 feet. No. 1 Farquhar is fishing at 2,450 feet. A derrick is also up for No. 1 Phoenix.

In the Edgerly Pool, the Roxana Petroleum Corp.'s No. 1 Hunter is drilling around 5,150 feet, one of the deepest tests to be made in south Louisiana. G. W. Gray's No. 11 Lilliard is drilling deeper at 1,455 feet.

In the Vinton Pool, the Vinton Petroleum Co.'s No. 49 Gray is good for 200 bbls. at 2,400 feet.

The Empire Gas & Fuel Co. is drilling a test in Ascension Parish, 9 miles from the east bank of the Mississippi River around 3,550 feet. In Acadia Parish, Demman and others' No. 1 Chapping is drilling and the Pure Oil Co. is drilling No. 1 Sweeti in Cameron Parish.

In the Jennings Pool, the Ogden Oil Co. has started No. 1 Heywood and the Port City Oil Co. No. 3 Heywood.

In La Fourche Parish, the Bowie Oil Co.'s No. 1 Bowie, is drilling below 2,230 feet.

The Roxana Petroleum Corp. has added 5,000 acres to its holdings in Cameron Parish in the Johnson Bayou region, making a total of over 30,000 acres under lease on which the torsional balance method of locating saline domes will be used and will be followed by a series of formation tests, drilled with a light gasoline rotary rig.

Coastal Wildcats

The Rycade Petroleum Corp. abandoned No. 1 Nash, its deep test at the Wisdom Dome, 7 miles southeast of Damon Mound, at 5,022 feet in shale. The company is drilling No. 3 Nash there at 3,705 feet and installing a heavy rig over No. 1 Meier. A location has been made for No. 1 Moore.

The Gulf Production Co.'s No. 4 Moore in Fort Bend County is at 1,223 feet and the Pathfinder Oil Co.'s No. 1 Pickney at 565 feet. The Marland Oil Co.'s No. 1 Lockwood is drilling at 543 feet.

In Matagorda County the Marland Oil Co.'s No. 1 Dwyer is below 5,100 feet and the Shepherd Dome Oil Co.'s No. 1 Hawkins at 1,543 feet.

In Chambers County S. J. Hindman's No. 1 Collier on the east side of the Barber Hill Dome is at 3,355 feet. At Hockley Dome in Harris County, The Texas Co.'s No. 1 Warren is below 3,600 feet and No. 3 Warren is around 1,500 feet.

Many formation tests are drilling in the Coastal counties and inland by The Texas Humble and Gulf companies, which follow explorations by the sesimograph or torsional methods of locating saline masses. Most of these go to from 500 to 1,200 feet and are abandoned.

Milam County

Works is increasing in the Rockdale-Minerva shallow sand section of Milam County. Roundtree and others have a 30-bbl. pumper, 1 mile north of Rockdale. Brice and Way's No. 1 Gross is rated at 15 bbls. and No. 2 Gross at about the same initial output. The Noack Oil Co.'s No. 5 Sterlsky is pumping 5 bbls. and John H. Lee's No. 6 Phillips is making about the same amount. Cottle & Co.'s No. 1 Kratz is bailinig and Long and others' No. 7 Lewis is drilling in.

An increase of operations is noted in the district. The Oriental Oil Co. is drilling No. 8 McClelland and Fritz Fuchs' No. 3 Henry. The Fuchs-Murray Co. has a derrick for No. 2 Abernathy. John E. Lee is rigging No. 4 Phillips. The Junior Oil Co.'s No. 1 Coulter is setting casing at 1,000 feet. Price and Way are rigging No. 3 Gross. Terrell and others' No. 1 Schroeder, is below 355 feet. H. T. Coulter's No. 1 fee is drilling at 545 feet. The Bartlett Oil Co. is starting No. 3 Coulter. The Bowman Oil Co. is offsetting the Roundtree well. The proposed deep test of the Magnolia Petroleum Co. on the Kime tract, 6 miles northwest of Rockdale, is drilling at 1,655 feet. John E. Lee and others have started a deep test on the Isaacs, 4 miles north of Rockdale. The contract calls for 3,000 feet.

The Crusader Oil Co. operating in the Smackover Field, is reported to have blocked up 8,000 acres west of Center, Shelby County. A location has been made near Joaquin in the eastern part of that county.

The Texas-Pacific Coal & Oil Co.'s No. 1 Lark in the Calliham district is a gas well at 1,015 feet. The Texas-Pacific Coal & Oil Co.'s Lightfoot No. 5 Lark is reported to have a new sand there at 1,050 feet, which shows oil of 34 gravity. The present small production is found around 820 feet and the product is heavy grade, around 18 gravity.

Greer and others are rigging 10 miles south of Gonzales. In Dewitt County the Cuero Oil & Gas Co.'s No. 1 at Five Mile Creek is a location and the Yoro Development Co. is starting near Edgar.

In the Luling Field on the Caldwell County side, the United North and South Oil Co. has started drilling Nos. 6 and 7 Lee Byrd and No. 21 Tabor.

The Humble Oil & Refining Co. is making a series of formation tests in Willacy, Newton, Martin, Jasper counties in addition to those tests it is drilling in the Coastal Plains territory. The Sun Oil Co. has also developed a surprising amount of activity, especially in such new regions as South Liberty and Lockhart. It is now one of the most active operating corporations in Texas.

Late Completions

The Humble Oil & Refining Co.'s No. 2 Merchant in the Hull Pool is flowing 3,000 bbls. at 4,150 feet.

The Texpata Pipe Line Co. is laying a 2-inch line to the Henne, Winch and Farris well, 1 mile south of production in the Jim Hogg County Field. Some estimates say the well will make 4,000 bbls. when opened up.

DEATH OF A PIONEER IN OIL WELL POWER

John Carruthers, president of the Bessemer Gas Engine Co., whose death at three score and 10 at his home in Grove City, Pa., was learned with regret by veteran oil men, was described as a genius with machinist tools. His brain seemed capable of comprehending the most complex problems of internal combustion engines with an ease that aroused the admiration of all who worked with him."

He began his career at Karns City, Pa., as foreman of an oil well supply and machine shop, under the ownership of J. H. Luther & Son. Later he moved to a small town near Bradford, where he opened an oil well supply store. In 1890, he became a partner in Carruthers & Peters, in Harmony, sold later to the Butler Oil & Supply Co. Mr. Carruthers and his partner started another supply business in Callery.

It was during these years that Mr. Carruthers became interested in the problem of power in the oil field, in an effort to lower the cost of drilling from the expensive steam engines then generally used. Working independently, Dr. E. J. Fithian, a young physician, took up the study of oil well power and started experimenting. The object of both was to invent an internal combustion cylinder that could be placed upon the steam engine bed after the removal of the steam cylinder and use the greater part of the equipment then in use for the pumping of oil wells.

Dr. Fithian experimented first with a man named Willetts, of Harmony. On agreement, Dr. Fithian purchased Willett's interest but later sold it to H. M. Bentle. These two worked a year until they had a gas engine which they thought salable. Mr. Bentle sold his interest, including the patent right, to Dr. Fithian.

It was at this time that Dr. Fithian and Mr. Carruthers decided to join forces and manufacture the engine perfected by Dr. Fithian and added his discoveries and equipment to the company known as Carruthers & Fithian Clutch Co., and later as the Bessemer Gas Engine Co.

Mr. Carruthers moved his Callery shop to Parkersburg, W. Va., where Jack McCune and Arthur Hill became interested in it. In 1903 this was moved to Lima, Ohio, and later the new plant was built at Grove City.

Ethylized Gasoline Sale Is Suspended Pending Conference

NEW YORK, May 5.—The Ethyl Gasoline Corp. announced last night that effective today it will suspend indefinitely deliveries of tetraethyl lead for resale to the public in ethylized gasoline.

Deliveries to the United States Government and to foreign Governments and for research and experimental purposes are not affected by this action.

The statement says: "As controversy has arisen among scientists as to the ultimate effect on the public health of the general use of this fuel and the Surgeon General of the United States has issued an invitation for a conference to be held in Washington on May 20, at which time all available information will be considered, the directors have decided to discontinue distribution. At this conference the corporation hopes that a constructive program of investigation may be worked out."

The company claims that in the use of ethyl gasoline there has been no indications of injury to health. The Standard Oil Co. has no intention of supplying any substitute for ethyl gasoline.

WASHINGTON, D. C. May 2.—Hearty response is expected from scientists whom Surgeon General Hugh S. Cumming, of the Public Health Service, has decided to call to Washington to participate in a conference on the use of tetraethyl gasoline.

Specialists in universities which have been conducting tests on the effects of the gasoline will be included in the conference, which will be largely made up of chemists, physicians, pathologists and representatives of the automobile industries.

The Health Service, it was informally learned, regards as premature the publication of a report by the Bureau of Mines last November in which it was stated that tests conducted that year had not demonstrated deleterious effects on animals used as subjects. The Bureau of Mines takes the position that this report was of a preliminary nature and was to be followed later by a more exhaustive inquiry.

Dr. H. Foster Bain, director, and Dr. R. R. Sayers, chief surgeon of the bureau, state that new studies are being made at the Pittsburgh laboratory and it is possible another report may soon be issued although even this must not be taken as final. These officials maintain that their preliminary report of last November should not have been accepted as conclusive that tetraethyl was harmless and that if States had abandoned their laws against the fuel purely on the basis of this report they had acted too rapidly.

While the Public Health Service intends to conduct its inquiry independently of other agencies, it is understood that the service will also consult the studies now being made by special agencies, including those carried on by several universities.

KANSAS FIELDS

(Continued from Page 42)

6, CSL NW Section 3-25-9, is drilling at 650 feet.

Woodson County

C. & C. Leasing Co.'s No. 4, SE cor. SE Section 31-25-13, is drilling with a machine at 600 feet.

Greenwood County

Jack Robinson and others have a rig on the ground for No. 1, NE cor. NE Section 25-23-8.

The White Eagle Oil Co. has a rig on the ground for No. 1, NW cor. SW Section 35-23-8. The Greenland Oil Co. has completed No. 3 Nuttle, SW cor. NW SE Section 10-23-9. Sand was 2,320-63 feet and the well is good for 125 bbls. after a 60-quart shot. The Greenland Oil Co.'s No. 4 Nuttle, NE cor. NE Section 10-23-9, is drilling at 470 feet. The Greeland Oil Co.'s No. 5 Nuttle, NE cor. SW SE Section 10-23-9, is spudded.

McGinnis & Bitler have completed No. 6 Teeter SE cor. NE NW Section 15-23-9. Sand was 2,318-77 feet, the well was shot with 115 quarts and is good for 60 bbls.

The Skelly Oil Co. has completed No. 1 Teeter, SE cor. NW NW Section 15-23-9. Sand was 2,327-80 feet and the well is good for 240 bbls. after a shot of 110 quarts. The Empire Gas & Fuel Co.'s No. 23 Teeter, SE cor. SW NE Section 16-23-9, is drilling at 237 feet.

Davis, Hazlett and others' No. 3, SW cor. SE Section 12-22-10, is drilling at 910 feet. The Phillips Petroleum Co.'s No. 1, SE cor. SW Section 12-22-10, is drilling at 800 feet. McGinnis and others' No. 3 Kipfer, CEL SW NE Section 13-22-10, is drilling at 536 feet. The Skelly Oil Co. and others' No. 1-A, NW cor. NE NW Section 13-22-10, is spudded.

The Syndicate Oil Co. has a rig up for No. 4, NW cor. SE NE Section 13-22-10. The White Eagle Oil Co. has a rig on the ground for No. 1, NW cor. NE Section 13-22-10, and for No. 2, SE cor. NW NE Section 13-22-10. The Sinclair Oil & Gas Co. has spudded No. 14 Browning, SW cor. SE SE Section 19-22-10, and No. 15 Browning, NE cor. NW SE Section 19-22-10. The White Eagle Oil Co. has spudded No. 2 Browning SE cor. SW NE Section 19-22-10.

The Transcontinental Oil Co. is cleaning out No. 5 Nuttle, NE cor. NW SE Section 2-23-9. The well was shot with 40 quarts in sand 2,389-2,400 feet, and the hole is standing with 700 feet of fluid. The Transcontinental Oil Co. has completed No. 6 Nuttle C N half S half Section 2-23-9. Sand was 2,330-48 feet, the well was shot with 50 quarts and is making 200 bbls. on the swab. The company spudded No. 8, SW cor. SE SW Section 2-23-9, and has the rig up for No. 9, SW cor. NE SW Section 2-23-9, and a rig on the ground for No. 10, NW cor. NE SW Section 2-23-9.

Murphy and others' No. 2 Nuttle, SW cor. SW Section 2-23-9, is drilling at 1,150 feet. J. B. Murphy and others' No. 4 Green, NW cor. SW SW Section 2-23-9, is a rig. The Greenland Oil Co.'s No. 2-B, SW cor. NW NE Section 2-23-9, is drilling at 940 feet.

The Greenland Oil Co.'s No. 1 Green, SE cor. NE NW Section 2-23-9, Bradenheaded 3,000,000 feet of gas from sand 2,333-62 feet. Hole is full of oil from 2,362-2,408 feet. It will be put on the pump.

The Skelly Oil Co. has completed No. 1, SE cor. NW Section 2-23-9. Sand was 2,303-55 feet and the well is making 250 bbls. naturally and 4,000,000 feet of gas. The Skelly Oil Co. has the rig up for No. 2, NE cor. SE NW Section 2-23-9, and for No. 3, SW cor. SE NW Section 2-23-9.

The Emerald Oil Co.'s No. 1 Teeter, SW cor. SE NW Section 24-23-9, is drilling at 450 feet.

Chris Sheedy and others have a rig up for No. 1 Nuttle, NW cor. NW Section 11-23-9.

Other Greenwood Operations

The Phillips Petroleum Co.'s No. 8, SE cor. NW SE Section 13-23-10, is drilling at 1,920 feet. The Mid-Kansas Oil Co. has completed No. 21 Allen, SW cor. SE NE Section 23-23-10. Sand was 2,062-2,118 feet and the well is good for 100 bbls. after a shot of 160 quarts. The Mid-Kansas Oil Co. has a rig on the ground for No. 22 NE cor. NW SE Section 23-23-10.

The Mission Oil Co. and others have completed No. 47 Thrall C N half SW section 28-23-10. Sand was 2,320-98 feet, total depth 2,403 feet. The well was shot with 150 quarts and is good for 75 bbls. Their No. 52 C NE SE Section 29-23-10, is drilling at 425 feet; and No. 53 C SW SE Section 29-23-10, at 900 feet. The Mid-Kansas Oil Co. has a rig on the ground for No. 27, NW cor. SE Section 31-23-10, and for No. 28, NW cor. SE SW Section 31-23-10.

Lassen and others' No. 1, NE cor. NW Section 7-25-9, had sand 2,192-2,206 feet, total depth 2,266 feet. It was plugged back to 2,210 feet and shot with 60 quarts. It is good for 30 bbls. The Mid-Kansas Oil Co. is spudding No. 15, CNL SE Section 19-25-9. The Mid-Kansas Oil Co.'s No. 5, CSL SE NW SW Section 30-25-9, had sand 2,418-78 feet and is good for 100 bbls. after a 160-quart shot.

Roth, Faurot, and the Mission Oil Co. have a rig on the ground for No. 8 C SW NE Section 1-24-9. The Arkansas Fuel Co. has completed No. 7, CSL NW SE SW Section 1-24-9. Sand was 2,290-2,336 feet, the well was shot with 100 quarts and is good for 150 bbls. The company's No. 8 Marshall, NE cor. SW Section 1-24-9, had sand 2,299-2,358 feet and is estimated at 100 bbls. It will be shot. The Lewis Oil Co.'s No. 4, NW cor. SE Section 1-24-9, had sand 2,300-35 feet, was shot with 30 quarts and is good for 60 bbls. It will be shot again.

The Transcontinental Oil Co.'s No. 14, CSL NW SE SE Section 11-24-9, is drilling at 500 feet. The Mission Oil Co. has completed No. 6, CSL NW NW Section 23-24-9. Sand was 2,127-2,201 feet, and the well is good for 100 bbls. after an 80-quart shot. The company has completed No. 7, CSL NE NW NW Section 23-24-9. Sand was 2,137-68 feet and the well is making 108 bbls. after an 80-quart shot. No. 8 C SW NW Section 23-24-9, is drilling at 600 feet.

The Superior Oil Corp.'s No. 1 Mason, SE cor. NE Section 14-25-13, is dry and abandoned at 1,520 feet. Tom Miller and others' No. 1, NE cor. NW NE Section 33-26-8 is rigging up.

Frank Swift and others' No. 1, NW cor. SE Section 24-26-9, is a rig on the ground.

The Mid-Kansas Oil Co.'s No. 19, SE cor. NW SE Section 31-23-10, is estimated at 150 bbls. after a shot of 160 quarts. Sand was 2,303-74 feet. Its No. 20, NE cor. NW SE Section 31-23-10 had top of sand 2,306 feet, pay 2,336-84 feet. The sand was shot with 220 quarts and the hole is standing full of oil. It has completed No. 21, SW cor. SE NE Section 31-23-10. Sand was 2,284-2,344 feet. The well is good for 125 bbls. after a shot of 200 quarts. Number 24, NE cor. SE SW Section 31-23-10, is drilling at 750 feet, and No. 25, SE cor. SW NE Section 31-23-10, at 300 feet.

The Great Southern Oil Co.'s No. 5, SW cor. NE SW Section 32-23-10, had broken sand 2,290-2,307 feet; sand 2,307-2,322 feet, total depth 2,350 feet. It was plugged back to 2,325 feet and shot with 50 quarts. It is estimated at 20 bbls. The Mission Oil Co.'s No. 7, Thrall, SE cor. NW SW Section 32-23-10, had sand 2,291-2,334 feet, was shot with 100 quarts and is estimated at 70 bbls.

The Phillips Petroleum Co. has completed No. 7 Lewis, NE cor. NW NW Section 32-23-10. Sand was 2,270-2,335 feet, total depth 2,341 feet. The well was shot with 155 quarts and is good for 140 bbls.

The White Eagle Oil Co.'s No. 1, SE cor. SW NW Section 7-22-11, is dry and abandoned at 2,317 feet. The Tidal Oil Co. has a rig on the ground for No. 1, SE cor. NE Section 11-22-11. The Empire Gas & Fuel Co.'s No. 1, NE cor. NW SW Section 12-22-11, is drilling at 670 feet; No. 2, NW cor. SW NE Section 32-22-11, as 450 feet; and No. 3, SE cor. SW NE Section 32-22-11, is a rig. The York State Oil Co. is drilling at 635 feet in No. 2 C NE SE NW Section 32-22-11, has a rig up for No. 7-A, NE cor. NW SE Section 32-22-11, and will shoot No. 15, NE cor. SE SW Section 32-22-11. Sand was found 1,905-68 feet, and the hole filled up 1,000 feet with oil.

Polhamus & Carter are drilling at 250 feet in No. 1-A, SW cor. SE SE Section 27-24-9. Roxana Petroleum Corp. has completed No. 5 Marshall, SE cor. NE NW Section 34-24-9. Sand was 2,175-2,222 feet and the well is good for 80 bbls. after a shot of 90 quarts.

Cowley County

The Trees Oil Co. is building the rig for No. 4, SE cor. SW NE Section 10-31-3.

T. B. Slick and others have completed No. 1 Waite, NE cor. SE Section 19-32-3. First sand was 2,591-2,610 feet, second sand 2,737-2,750 feet, producing from both sands. The well is good for 150 bbls. naturally. T. B. Slick and others have completed No. 1-B, SW cor. NE Section 19-32-3. First sand 2,580-2,617 feet, second sand 2,736-45 feet, the well is producing from both sands. It swabbed 250 bbls the first 12 hours.

Graham Pool

The Marland Oil Co. has a rig up for No. 3-A, SE cor. SW NW Section 10-33-3. The Marland Oil Co. has spudded No. 2 SW cor. NW NE Section 10-33-3.

The Wentz Oil Corp.'s No. 1 C NE SE Section 17-33-3, had 8 bbls. oil and 7,000,000 feet of gas in sand 3,168-3,202 feet.

Rainbow Bend Pool

Waite Phillips Co.-Independent Oil & Gas Co.-Marland Oil Co. has completed No. 1, SE cor. SE Section 18-33-3. Sand was 3,233-3,253 feet and the well is making 75 bbls.

T. B. Slick and the Marland Oil Co. have completed No. 1, SE cor. NW Section 19-33-3. Sand was 3,180-3,203 feet, total depth 3,207 feet. The well was good for 18 bbls. natural and was shot with 30 quarts which produced 75 bbls.

Waite Phillips Co. and others have spudded No. 5, SE cor. NE SE Section 20-33-3.

Winfield Pool

The Marland Oil Co. and Neely have completed No. 2, SE cor. SW NE Section 13-23-4. Sand was 2,568-77 feet, first oil at 2,569 feet, and the well is good for 150 bbls. natural.

J. A. Hull and the Emerald Oil Co. have a rig up for No. 1, NE cor. NE Section 23-32-4. J. A. Hull and others' No. 1, NE cor. NW NE Section 36-23-4, is dry and abandoned at 3,165 feet.

Near Arkansas City the Muddy Oil Co. is moving in a rig for No. 1, NE cor. SE Section 16-35-4.

The Empire Gas & Fuel Co. had 4,000,000 feet of gas at 2,315-34 feet in No. 3 Brown, NE cor. SW NE Section 13-31-7. It is now drilling at 2,355 feet.

Wakefield and others have a rig up for No. 1 Riding NE cor. SW Section 32-32-6.

Sumner County

The Mid-Continent Petroleum Co.'s No. 1, NW cor. SE Section 16-31-2, is dry and abandoned at 3,717 feet.

OKLAHOMA

(Continued from Page 42)

No. 2 Jacobs, NW cor. NE NE Section 14-7-8. The Roxana Petroleum Corp. has a rig up for No. 1 SW cor. NW Section 28-7-8.

Tommy Atkins and others are spudding No. 1 Sewell, SE cor. SW SW Section 14-7-9.

North of Ada

The American Oil & Refining Co. is rigging up No. 1, SE cor. NE Section 33-5-6.

Davenport District

The Magnolia Petroleum Co.'s No. 4 Ely, SW cor. NW SW Section 2-14-5, is drilling at 325 feet. The Magnolia Petroleum Co. has a rig up for No. 3 Ely, SE cor. NW SW Section 2-14-5.

The Texas Co.'s No. 2 Oleson, NE cor. SW SW Section 2-14-15, is drilling at 400 feet. The Southwestern Petroleum Co. and Shelby Oil Co. are drilling at 146 feet in No. 2 Bagwell.

The Tidal-Osage Oil Co. has a rig on the ground for No. 1, SW cor. SE NW Section 4-9-11.

Payne County

The Josey Oil Co. has completed No. 5 Ellis, SW cor. NW NW Section 1-18-5. Gas from 1,327-49 feet; water 1,355-57 feet; total depth 1,357 feet. The water was plugged off and the well shut in with 1,000,000 feet of gas.

Watchorn Pool

The Magnolia Petroleum Co.'s No. 1, SW cor. NW NE Section 4-22-3, has 3,000 feet of oil in the hole from sand 4,163-73 feet.

Garber Field

The Knox Oil Co. is drilling at 1,900 feet in No. 3, CWL SW SW SE Section 7-22-3w. The Aubyme Oil Co. is rigging up to drill an old well deeper in No. 10 Giles, CEL NW SW Section 7-22-3w. Old total depth is 1,620 feet. Its No. 12 Giles, SE cor. NW SW Section 7-22-3w, is drilling at 2,500 feet; this is an old well being drilled deeper. D. W. Franchot and others' No. 12 Giles, SE cor. SW SW Section 7-22-3w, an old well being drilled deeper, is drilling at 2,100 feet. The Roxana Petroleum Corp. has spudded No. 1, SW cor. SW Section 18-22-3w; is building the rig over No. 9, SW cor. SW Section 18-22-3w. Old total depth is 2,006 feet. It is also building a rig over No. 10-A, NW cor. NE SW Section 18-22-3w. Old total depth is 2,210 feet. It has completed No. 15, NE cor. NW SW Section 18-22-3w, for 440 bbls. natural from sand 2,312-25 feet.

The Sinclair Oil & Gas Co. has completed No. 7 Hartley, SE cor. SW NW Section 18-22-3w, for 500 bbls. natural from sand 2,294-2,304 feet. The Crews Heirs Oil Co. has spudded No. 18-B, SW cor. NE SW Section 19-22-3w. The Sinclair Oil & Gas Co. is rigging up No. 20 Kisner, NW cor. NW Section 19-22-3w. Its No. 2 Burns, NW cor. NE SE Section 30-22-3w, is dry and abandoned at 2,796 feet and it is spudding No. 8, NE cor. NW SE Section 30-22-3w. The Marland Oil Co. and Mid-Continent Petroleum Cos. have completed No. 40, NW cor. NE SE Section 13-22-4w, for 650 bbls. natural from sand 2,319-33 feet. The same companies have spudded No. 41, SE cor. SE Section 13-22-4w.

The Carter Oil Co. is spudding No. 52 NE cor. NW Section 24-22-4w. The Healdton Oil & Gas Co. is drilling at 650 feet in No. 28 CEL NW NE Section 24-22-4w. Hopper and others are building the rig for No. 1 Peters, NE cor. SW Section 27-22-4w.

The Imo Oil & Gas Co.'s No. 10, CNL NW NW Section 36-22-4w, is spudded. The Blaine Oil Co. has a rig up for No. 1 C SE Section 33-22-2w.

Grady County

Sultan and others' No. 3 Perry, NE cor. NW Section 22-5-7w, had broken sands 1,959-2,040 feet. At present it is making about 5,000,000 feet of gas. The owners expect to drill about 50 feet deeper. Their No. 1 CEL SE SW Section 15-5-7w, is drilling at 100 feet. The Oklahoma Natural Gas Co. is cementing surface pipe in No. 4, NE cor. NW SW Section 23-5-8w. The Nichols Oil & Development Co. has completed No. 3 Chandler, SE cor. NW SW Section 26-5-8w, for 62,000,000 gas from sands 2,464-2,504 feet. Nichols' No. 4 Chandler, SW cor. NE SW Section 26-5-8w, is drilling at 100 feet.

Blackwell Pool, Kay County

The Simms Oil Co. is moving in the rig for No. 1, NE cor. SW Section 33-28-1w.

The Ona Oil Co. has completed No. 1, SE cor. SW Section 17-29-1. The well is shut in with 20,000,000 feet of gas from sand 1,970-81 feet. The Ona Oil Co. has completed No. 1 NW cor. NE, Section 20-29-1 for 33,000,000 feet of gas from sand 1,973-82 feet. The Vernon Oil & Gas Co. has spudded and shut down No. 1 SW cor. NW SW Section 21-29-1. The Grand Island Oil & Gas Co.'s No. 1 SE cor. NE NW Section 15-28-1, is dry and abandoned at 3,419 feet. This is an old well drilled deeper.

The Ostot Development Co. has a rig up for No. 1 Bailey, SW cor. NE Section 7-27-1w. The Tidal Oil Co. has spudded No. 1, SE cor. SW SE Section 8-27-1w.

The Blackwell Oil & Gas Co. is drilling at 675 feet in No. 2 Kumler, C SW SE Section 9-27-1w. The Blackwell Oil & Gas Co. has completed No. 3 Kumler, SE cor. NE SE Section 9-27-1w, for 200 bbls. natural from sand 2,360-61 feet.

Thomas Pool, Kay County

The Marland Oil Co.'s No. 2 Thomas, SE cor. SW SW Section 15-25-2w, is spraying 68 bbls. oil and 5,000,000 feet of gas from sand 3,973-75 feet. The Marland Oil Co.'s No. 1-A, SW cor. NE NE Section 9-25-2w, is underreaming 10-inch casing at 1,200 feet.

Tonkawa

The Comar Oil Co.'s No. 14-W, CSW NE Section 2-24-1w, is swabbing 189 bbls. from sand 4,293-4,320 feet. The Comar Oil Co.'s No. 1w Blubaugh, CNL NW NW SW Section 2-24-1w, is drilling at 4,330 feet. This is an old well drilled deeper.

Donahoe Pool

The Amerada Petroleum Corp.'s No. 1, NE cor. SW SE Section 22-23-4, has a batch of gas estimated at 3,000,000 feet in sand 2,910-25 feet. It is drilling ahead at 2,950 feet.

The Comar Oil Co.'s No. 1, NW cor. SE SE Section 22-23-4 is standing with 6,000,000 feet of gas coming from sand 3,250-62 feet. The Carter Oil Co. and Donahoe's No. 3, SE cor. NW SE Section 22-23-4. is drilling at 2,905 feet. It had 8,000,000 feet of gas in sand 2,895-2,901 feet.

South of the Donahoe Pool

C. B. Wrightsman and others are building the rig for No. 1, SE cor. SE Section 24-22-4.

Hubbard Pool

The Marland Oil Co. has completed No. 2 Hill, SW cor. NE Section 1-26-2w, for 619 bbls. natural from sand 2,550-55 feet. Harris and Haun have a machine in for No. 1-A, C S half SE SE Section 2-26-1w.

The Marland Oil Co. has completed No. 2 Stoker NE cor. SE SW Section 1-26-2w. Sand was 2,563-67 feet, and the well is swabbing 90 bbls.

The Prairie Oil & Gas Co. has completed No. 3, NW cor. NE SE Section 1-26-2w for 607 bbls. natural from sand 2,520-34 feet. The Tonkawa Oil Co. has a rig up for No. 1, CEL SE SE NE Section 2-26-2w. The Marland Oil Co. has completed No. 6 North NE cor. NE Section 12-26-2w, for 310 bbls. natural from sand 2,536-38 feet.

Osage County

Jackson & Wise are rigging up a machine for No. 2, CEL NE SE Section 14-28-10. The Carter Oil Co. has completed No. 13, CNL NW NE NW Section 13-27-5. Sand was 2,998-3,067 feet and the hole filled up 1,000 feet with oil. The well was shot from 3,007-67 feet with 150 quarts and the well is doing 75 bbls. on the swab.

The Carter Oil Co. has completed No. 14, NE cor. NW Section 13-27-5. Sand was 2,991-3,054 feet, and the hole filled up 1,000 feet with oil. The well was shot from 3,000-41 feet with 120 quarts and is making 240 bbls. The Carter Oil Co.'s No. 15, SW cor. NE NW Section 13-27-5, is estimated as a 5-bbl. pumper. Sand was 2,965-3,018 feet, and the well was shot with 120 quarts.

The Phillips Petroleum Co. is building the rig for No. 4, CWL SW NW NE Section 16-27-5.

The Tidal-Osage Oil Co. is moving in the rig for No. 1 NE cor. SE Section 2-27-7.

The Texas Co. has completed No. 1 SE cor. SE Section 25-26-9. Burgess sand was topped 2,110 feet, Mississippi Lime topped 2,120 feet, first break 2-168-81 feet. The well made 80 bbls. the first 24 hours, and is now making 40 bbls.

The Owen-Osage Co. has a bad hole at 69 feet in No. 325, CNL NE SW SE Section 8-27-11. Its No. 324, SW cor. SE SE Section 9-27-11, is drilling at 350 feet.

C. B. Wrightsman and others are drilling at 450 feet in No. 4, C S half NE SW Section 19-25-8. The Atlantic Oil Producing Co. has completed No. 6, CEL NE SW SW Section 27-25-8. Pay was 2,722-24 feet and the well swabbed 280 bbls. the first 12 hours.

E. B. Lawson has completed No. 13, C W half SW NW Section 28-25-8. The Layton sand was 1,105-15 feet and the well is making 10 bbls. after a shot of 50 quarts.

Olean Petroleum Co. has the rig timbers on the ground for No. 5, C E half NW SE Section 19-25-9. The Texas Co. is rigging up a machine for No. 1, NW cor. SW Section 10-25-9. The Prairie Oil & Gas Co. and others are building the rig for No. 4, SW cor. SE SW Section 29-24-9.

The Barnsdall Oil Co. has completed No. 17-A, CSL SW NW NW Section 12-24-10. The Mississippi lime was topped 1,895 feet. First break 2,094-96 feet, 4,000,000 feet of gas. The well was plugged back to 1,724-44 feet and shot with 140 quarts. It is good for 5 bbls.

The Skelly Oil Co. and others have completed No. 5, CNL NW NE Section 12-24-11. The Bartlesville sand was found 1,625-1,721 feet, and shot with 140 quarts, and the well is estimated at 25 bbls.

The Owen-Osage Co.'s No. 319, C SW SW Section 3-22-10, is dry and abandoned at 1,986 feet.

T. K. Smith is drilling at 600 feet in No. 1, C NE Section 16-22-12. The Skelly Oil Co. and others' No. 17, CNL SW SW Section 34-22-12, is drilling at 1,700 feet. The Oklahoma Natural Gas Co. is moving in a machine to drill an old gas well deeper in No. 623, CSL SE NE NW Section 5-21-11. Old total depth is 1,620 feet.

Chocobeen Oil Co. is moving in a machine for No. 1, SW cor. SE Section 29-21-11. J. H. Alexander and others' No. 1 CSL SW NE Section 9-21-12, is drilling at 850 feet. C. W. Grimes and others have a rig up for No. 6, SE cor. SW Section 31-21-12.

Grimes & Gillespie have completed No. 15, CWL SW SE Section 31-21-12. Bartlesville sand was 1,433-73 feet and the well was shot with 80 quarts. It is good for 35 bbls. Grimes & Gillespie have spudded No. 25, CNL NE Section 8-20-12.

The Texas Co. is building the rig for No. 1 NE cor. SW section 34-26-4.

Grimes & Gillespie have completed No. 2 CSL SE SE SW Section 30-21-12. First oil was 1,905-55 feet; more oil to 1,958 feet; lime to 1,978 feet. The well is good for 75 bbls. natural.

Burbank

The Skelly Oil Co. is spudding No. 3, SE cor. SW Section 2-27-5. The Midland Oil Co. is drilling an old well deeper at 3,120 feet in No. 13, NW cor. NW Section 14-27-5. Old total depth was 3,103 feet.

The Texas Co. has completed No. 12, SW cor. NE NW Section 18-27-5. Top of sand 2,915 feet, oil 2,948 feet, total depth 2,983 feet, 1,800 feet of oil filled up in the hole naturally. The well was shot from 2,929-81 feet with 130 quarts, and made 175 bbls. The Texas Co.'s No. 14 has also been completed. Top of sand 2,918 feet, first oil 2,935 feet, total depth 2,972 feet. The hole filled 1,800 feet naturally, and was shot with 110 quarts making 250 bbls. The Texas Co. is digging the cellar and building the rig for No. 15, NW cor. NW Section 18-27-6. The Texas Co. is building the rig for No. 16, CNL NE NW NW Section 18-27-6.

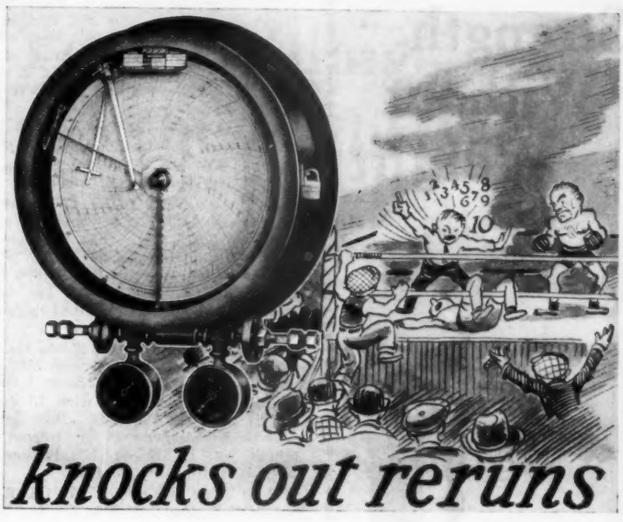
The Phillips Petroleum Co. has completed No. 11, SW cor. NE NE Section 18-27-6. Top of sand 2,984 feet, oil and gas 2,952 feet, total depth 2,966 feet. The well was good for 50 bbls. natural. It was shot from 2,895-2,966 feet with 180 quarts and made 200 bbls.

The Lewis Oil Co. is building the rig for No. 6, SW cor. NE NE Section 21-26-6. The Midland Oil Co. is drilling an old well deeper in No. 1 SW cor. NE Section 12-25-5. The 6-inch pipe will be pulled and the hole straight reamed to 2,890 feet. Old total depth was 2,923 feet.

Pawnee County

C. J. Wrightsman and others' No. 1 Hill, NE cor. SE SW Section 1-21-5, is drilling at 2,100 feet. It had a 20-bbl. show in the Cleveland sand from 2,013-25 feet.

Graham and others' No. 4, NW cor. SW SW Section 16-20-6, had sand 3,048-



Old Man Rerun is a pretty tough character. Refiners hate him. So a great majority of them install Foxboro Automatic Temperature Controllers on fractionating towers, knock-out boxes, primary condensers, auxiliary condensers, dephlegmator and bubble towers.

These refineries find that temperature must be automatically controlled for high yields, close cut fractions and for the elimination of costly reruns.

If your process needs this all important protection get in touch with our Tulsa office immediately. Our engineers understand how to put a stop to your troubles in the shortest possible time.

Write to Dept. O.

THE FOXBORO CO., Inc.
Neponset Ave., Foxboro, Mass., U. S. A.
205 South Cheyenne Ave., Tulsa, Okla.

New York Chicago Boston
Rochester Birmingham Los Angeles
Philadelphia Pittsburgh Cleveland
San Francisco Portland, Ore.

FOXBORO
REG. U. S. PAT. OFF.
THE COMPASS OF INDUSTRY

151

Strength Without Weight

Flat-link or Cable Chain Eight Sizes For ¼-in. to 16-in pipe.

The handle of the TRIMO Chain Wrench is of bar construction, instead of round. It is designed to give the greatest strength with the least weight.

Both handle and jaws are drop-forged of selected steel. The chain pocket is located in the handle where there is the most strength to resist the drawing strain, making the TRIMO considerably stronger than other chain wrenches.

Your nearest oil well supply house, hardware dealer, mill or plumbing supply house sells TRIMO products. Insist on TRIMO. Accept no other.

TRIMONT MFG. CO.

Roxbury, Mass.

TRIMO

168

80 feet, was shot with 30 quarts and is making 40 bbls. oil and 15 bbls. water.

The Magnolia Petroleum Co.'s No. 4 Burgamm, NE cor. SW SE Section 16-20-6, had sand 2,985-3,062 feet, oil at 3,040 feet, and has a hole full of oil. It will be shot. The Texas Co. is spudding No. 3 Ellis, SE cor. NW NW Section 27-20-6.

Pete Adamson and others are having trouble with the 6-inch casing in No. 4 Sigman, SW cor. NW SW Section 32-21-8. Total depth is 2,610 feet.

Ed Reese's No. 2 Miller, CNL NE NE SE Section 4-20-7, is dry and dry abandoned at 3,025 feet. The Superior Oil Corp.'s No. 1 Gillespie, SW cor. NW NE Section 9-20-7, had gas 2,585-2,600 feet; water from 2,751-53 feet. The water was plugged off and the well estimated at 5,000,000 feet of gas.

The Southwestern Oil Fields Co. has completed No. 9, NW cor. SE NW Section 24-20-8. Oil was from 2,764-74 feet, the well was shot with 10 quarts and is good for 125 bbls. It is an old well drilled deeper. C. H. Burton and others' No. 1, SE cor. NE Section 28-20-8, is drilling at 385 feet.

T. B. Slick and others' No. 1 Hill, SE cor. NW Section 1-21-5, is dry and abandoned at 3,635 feet.

Carter County

Concord Oil Co.'s No. 9, CNL NE SW SE Section 11-1-3w, is swabbing 125 bbls. from sand 1,562-80 feet.

The Magnolia Petroleum Co.'s No. 11 Heffner, SW cor. NE Section 27-2s-3w, has been completed for 8,000,000 feet of gas from broken sands 2,593-3,683 feet.

Merrick & Kirk's No. 2 Williams, SE cor. SE SW Section 5-3s-2w, is drilling at 700 feet. The Coline Oil Co.'s No. 2, SE cor. NW SE Section 8-3s-2w. The Schermerhorn Oil Co.'s No. 3 McGill, NW cor. SE SE Section 8-3s-2w, is a new rig.

The Magnolia Petroleum Co. has a rig on the ground for No. 2 NW cor. NE Section 19-1s-3w. The Magnolia Petroleum Co. has the rig built for No. 1 SW cor. NE Section 19-1s-3w.

The Humble Oil Co. has completed No. 3 Hales, SE cor. NE SE Section 28-1s-3w, for 260 bbls. Sands were 3,172-79 feet gas, broken sand 3,187-3,207 feet, total depth 3,217 feet.

Noble & Gault's No. 2, SE cor. NE Section 28-1s-3w, is estimated at 40 bbls. Broken sand was 3,359-87 feet, solid sand 3,387-3,405 feet, water 3,405-09 feet. It was plugged back to 3,400 feet to shut off the water.

Magnolia Petroleum Co.'s No. 4 Hart, NW cor. SW NE Section 32-23-3w, is drilling at 1,135 feet. Noble Olsen's No. 1 Parnell, NE cor. SW NW Section 34-1s-3w, is drilling at 2,270 feet.

Wirt Franklin has a rig up for No. 3 Lahman, NW cor. SE NE Section 22-2s-3w. Fitzgerald and others have completed No. 3 Williams CNL NW NE NW Section 23-2s-3w for 40 bbls. in sand 2,254-56 feet. Total depth is 2,258 feet.

Magnolia Petroleum Co. is setting the casing at 200 feet in No. 6 Williams, CSL NW NW SE Section 23-2s-3w. Magnolia Petroleum Co.'s No. 6 Smith, NE cor. NW SW Section 24-2s-3w, is drilling at 148 feet.

The Atlantic Oil Producing Co. had 7,000,000 feet of gas and a show of oil in No. 2 Stanton, NW cor. NE NW Section 25-2s-3w, from sand 1,994-2,006 feet. It is drilling ahead.

Magnolia Petroleum Co. has completed No. 6 Nelson, NW cor. NW Section 25-2s-3w. Broken sand was 2,392-2,434 feet, solid sand 2,760-85 feet, 2,910-22 feet and the well is good for 75 bbls. naturally.

Pontotoc County

The Oklahoma Co.'s No. 2 Lloyd, NE cor. SW NE Section 6-3-7, has been completed for 20 bbls. after a shot of 20 quarts. Sand was 1,222-57 feet.

Jefferson County

The Carter Oil Co. has completed No. 1, NW cor. SE SW Section 34-6s-5w. The well is making 57 bbls. natural from sands, 1,205-12 feet; 1,299-1,309 feet; total depth 1,313 feet. The Prairie Oil & Gas Co.'s No. 3 James, NW cor. SW Section 34-6s-5w, is good for 25 bbls. natural from sand 1,200-12 feet.

Sequoyah County

The Rogers Development Co.'s No. 1, CSL NE NE SW Section 13-9-24, is drilling at 300 feet.

Stephens County

The Kay Wye Drilling Co.'s No. 4 Brown, SE cor. NE Section 26-1-9w, is spraying 150 bbls. daily from broken sands 2,270-81 feet. The Magnolia Petroleum Co.'s No. 1 Woolsey, NE cor. NW SE Section 26-1-9w, is spudded.

Givens and others' No. 2 Carney, NW cor. SW NW Section 33-1-7w, is dry and abandoned at 2,860 feet. Crump & Beard's No. 3, SW cor. NW SW Section 14-1s-8w, is dry and abandoned at 1,060 feet. The Magnolia Petroleum Co.'s No. 2 Bridenthal, CEL SE SE SE Section 15-1s-8w, is completed for 2,000,000 feet of gas from sand 1,589-1,610 feet. Elmer Evans is drilling at 100 feet in No. 2 NE cor. SW Section 27-1s-8w. Walker Valley Oil Co.'s No. 1-A, SE cor. NW Section 27-1s-8w, is drilling at 80 feet.

The Skelly Oil Co. has a rig up for No. 3, NE cor. NW SW Section 30-1s-8w. Fisher & Brannon are cleaning out No. 1 NW cor. NW Section 25-1s-8w, to drill deeper. Old total depth is 1,591 feet. The Magnolia Petroleum Co. is cleaning out to drill deeper in No. 2, CSL SE SE NW Section 25-1s-9w. Old total depth is 1,830 feet. Winkler and others have completed No. 1-A, SW cor. SE SW Section 18-2s-7w, which is estimated at 50 bbls. from sand 1,369-81 feet.

The Knox Petroleum Co.'s No. 1-A, SE cor. SE Section 11-2-5w, is good for 52 bbls. natural from sand 1,412-19 feet.

Rogers and others' No. 1 NW cor. NW Section 13-2-5w, is drilling at 60 feet.

E. P. Kilgore's No. 1, NW cor. SW NE Section 2-1-5w, is making 15 bbls. of oil and 10 bbls. of water from sand 1,165-76 feet.

The Magnolia Petroleum Co. is building a standard rig for No. 1 Brown, SE cor. NE Section 3-2s-5w.

SOUTHWEST TEXAS FIELDS

(Continued from Page 44)

record up to this time with a flow of 70 bbls. a day for a period of three weeks.

Frontier Oil Co.'s No. 9 Harvey, reported a week ago as preparing to bring in at 1,700 feet, was carried deeper and is at 1,900 feet, and will drill to the Austin chalk. The Frontier is undertaking to obtain subsurface information and will drill one well on each 40 acres to the Austin to get the depth. No. 7 Langley, of the Frontier, is drilling at 1,100 feet.

W. E. Rutledge's deep test on the Kaufman is drilling at 2,600 feet, and is in the Austin chalk.

Luling Field

Thirty derricks were blown down by the storm last week in the Luling Field in Caldwell County, most of them belonging to the United North & South Oil Co., which also lost a warehouse. In addition to replacing the derricks blown down several new wells are being drilled in the proven field.

The York Creek Oil Co.'s test, 1½ miles north of the Guadalupe County end of the Luling Field, is drilling deeper after failing to get more than about 10 bbls. at 2,050 feet, where it tested in the Austin chalk. Pittman & Billingsly's No. 1 Hy Thomas is arranging to set casing. It is a few miles southwest of the York Creek's No. 1 Fulshur.

The territory between the Luling Field in the southwestern part of Caldwell County and the Lockhart Field in the northeastern in which a few wildcat tests have been made resulting in dry holes is beginning to take on new interest with the bringing in of the Lockhart Field and some additional tests will probably be made during the next few months. Also the wildcatters are extending up northeast of the Lockhart Field. C. V. Patton, who drilled on the J. T. Connolly and the John La Prelle tracts a year or more ago between the Luling and Lockhart Fields, is arranging to drill on the Glover farm in southern Bastrop County, in the Welschmyer survey, northeast of the Lockhart Field, and Foster & Reiter, of Oklahoma, are arranging to drill on the Milly Hicks farm in the John Jones survey.

The North & South Oil Co. has completed No. 10 Hardeman in the proven Luling Field, making 200 bbls. No. 11 Frank Mercer has missed the pay at the ordinary depth and is drilling deeper. Seals Creek Oil Co. is arranging to start a test on the Inscore lease.

Milam County

Magnolia Petroleum Co.'s No. 1 Kinsouthwest of Rockdale, is drilling below 1,500 feet after stopping for a few days to drill a water well. John E. Lee's No. 1 Leonard Isaacs, a deep test, 4 miles north of Rockdale, has spudded in and set 180 feet of 12½-inch casing, and has resumed drilling.

Incorporate Paul Process

Articles of incorporation of the Paul Process Development Co., with a capitalization of $100,000, have been taken out at Austin, Tex., by Dr. C. F. Paul, formerly professor of chemistry of the Texas State University and associates. The object is to erect a dehydrating plant at Panuco, Mexico, to reclaim emulsified oil. The process was explained in The Oil and Gas Journal of April 23.

W. G. LONG RESIGNS FROM PACKER COMPANY

William G. Long, treasurer and large stockholder of the Robinson Packer Co., with offices in Tulsa and a factory at Coffeyville, Kans., sold out his interest in the company and resigned his position effective April 25. Mr. Long has not been in good health for some time and desired to take a much needed rest. He will travel for about three months and then expects to return to Tulsa and may engage in the manufacture of oil field supplies.

Few men engaged in the oil business

W. G. Long

are more widely known than "Bill" Long. Before he came to Tulsa 13 years ago he was employed in various capacities in oil fields and knows the business from all angles. He has written extensively about the oil business and his poems about oil field workers and phases of the industry have been circulated widely.

Mr. Long was largely instrumental in the success attending the development of the Robinson Packer Co.

HELIUM FOR ONE DIRIGIBLE

PITTSBURGH, Pa., May 2.—There is accessible now in this country only enough helium to operate one dirigible at a time, it was revealed by Commander Zachary Lansdowne, in charge of the "Shenandoah."

The commander asserted that with a dirigible in flight the wastage of helium through seepage amounts to about $50,000 a month, but that in time a remedy will be found to greatly reduce the wastage. He also said that with 25 more miles of pipe line at Fort Worth the helium supply will be much increased and the cost reduced.

Lubricate Your Drilling Engines the Right Way

Save your engine cylinders and reduce your oil and repair bills. Don't use a gallon of oil when you can get better results from half a gallon. If the oil is put into the engine cylinders regularly, a little oil is all that is needed.

The "MANZEL" Force Feed Lubricator

Will Give Your Engine the Best Possible Lubrication

The "Manzel" measures out the oil to the engine cylinders just as it is needed. It doesn't require any attention; doesn't need to be turned on or off. It adjusts itself, automatically, to the speed of the engine—starts with the engine —speeds up or slows down with it and stops feeding oil the instant the engine stops.

All you need to do is to keep oil in the reservoir and the "Manzel" will do the rest.

That's why thousands of drillers are using "Manzel" Lubricators on their drilling engines, steam pumps, air compressors, etc. They know from experience that "Manzel" Lubricators oil their engines the way they should be lubricated and reduce their oil bills 30 to 60%.

Easy to Install, Too

"Manzel" Lubricators are easily installed by anyone in the field in a half hours' time.

We furnish—when desired—complete fittings for installing them on Oil Well, Ajax, Acme, Warren, Lucey or other small drilling engines.

No thread cutting or pipe fitting is necessary. No need to take down steam pipe, build a bracket or to do machine work of any kind.

Simply clamp the bracket (which we furnish) around the steam pipe, run rod to link roller pin, connect up pipe and you are ready to run.

Only takes a few minutes to do this and your lubrication troubles are over.

Let us send you circular and full information

All leading supply dealers carry "Manzel" Force Feed Lubricators in stock and will be glad to supply you.

MANZEL BROTHERS COMPANY

336-338 Babcock St. Buffalo, N. Y.

BIT AND JAR-STEEL

BOX-PIN-STEEL-SLIP-STEEL

UNDER-REAMER-BODY and CUTTER STEEL, DRILL COLLAR STEEL

ASCO

CAPPING and SOCKET STEEL TOOL-JOINT STEEL

SPECIAL-HIGH-GRADE

SPECIAL ALLOY STEEL

FORGING-BILLETS

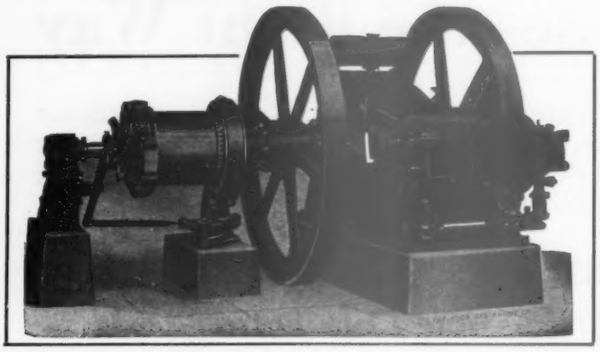
QUALITY and SERVICE

Manufactured By

ANDREWS STEEL CO.

NEWPORT, KY.

THE FOOS



The FOOS Type "OK" Engine For "Oil Country" Service

Thirty-eight years of building high-quality engines has produced the Type "OK" Engine for oil field service. Its absolute dependability and ease of operation make it the perfect power unit for well pumping. No racking explosions or excessive vibration—but smooth continuous delivery of abundant power.

The Foos "OK" is a four cylinder engine with a central oiling system that automatically oils all important bearings. All parts are readily accessible. Simply designed and built for rugged strength and long service. 25 to 50 H.P. Write for Bulletin G-90 giving complete information.

THE FOOS GAS ENGINE CO., Springfield, Ohio

For 38 years, manufacturers of high-quality internal combustion engines exclusively. Types for all gas and liquid fuels—sizes up to 750 H.P.

Call for

"IWANA"

HAIR BELT

And Get the Best By Test

BETTER BELT SERVICE

LONGER BELT LIFE

IWANA HAIR BELT

FENWICK-REDDAWAY MFG. CO.

CAMEL'S HAIR, COTTON AND LINEN PRODUCTS

Office and Factory: NEWARK, N. J.

Tulsa Representative: A. F. Campbell, P. O. Box 171

DEPENDABLE MID-CONTINENTAL STATES MAKE GREAT SHOWING

The pre-eminently important place held by the Mid-Continental States in the production of oil is emphasized by the showing made in the month of March and the present month by the oil regions of Kansas, Oklahoma, Texas, Arkansas and Louisiana as compared with a year ago.

While California's production in March 1925, was approximately 1,245,000 bbls. below that of March, 1924; the Rocky Mountain States' output, 1,015,715 bbls. below that of March a year ago and the production of the States east of the Mississippi, 126,511 bbls. below the figures of a year previous. Kansas, Oklahoma, Texas, Louisiana and Arkansas showed a combined increase of 2,475,638 bbls. over the corresponding period last year. Comparing production in March, 1925, with that of March, 1924, Kansas showed a gain this year of 618,108 bbls.; Oklahoma, 1,066,865 bbls.; Texas, 1,002,963 bbls.; and Louisiana, 105,924 bbls. Arkansas was the only one of the five States that fell off, its decrease having been 318,222 bbls. All the figures given are for the entire month in both years.

The average daily production of the five States in March, 1925, was 1,149,926 bbls., a decline from the production of the same States in February this year of 3,857 bbls. per day.

Oklahoma showed the biggest falling off, the average daily production of that State having dropped from 496,635 bbls. to 464,636 bbls., a decline of 31,999 bbls., due particularly to the decline in the Tonkawa, Papoose and Cromwell Fields. Kansas showed an increase of 3,024 bbls. over February; North and Central Texas an increase of 1,212 bbls.; Gulf Coast an increase of 11,351 bbls:; Southwest Texas a decrease of 8,123 bbls.; Arkansas an increase of 11,901 bbls., and North Louisiana a gain of 2,536 bbls.

The tremendous deep sand production in Smackover, Union County, Arkansas, this month will greatly increase the daily output of the five States over last month as Oklahoma and Kansas will about hold their own, the Gulf Coast will show an increase because of the new production in the Liberty district and elsewhere, and the North Central Texas area will do about as well this month as in March because it will show gains in the North Texas area sufficient to offset declines in other parts of the field. There will be no great change in Louisiana.

The average daily production of last April in the five States was 1,095,095 bbls. The same States at the beginning of this month were producing 1,168,934 bbls. and by the middle of the month had increased to 1,295,235 bbls., due principally to the deep sand production of heavy gravity fuel in southern Arkansas.

SUMMARY OF PRODUCTION
In Kansas, Oklahoma, Texas, Arkansas and Louisiana in March, 1925.

State—	Av. Daily Prodn. Bbls.	Monthly Prodn. Bbls.
Kansas	91,114	2,824,534
Oklahoma	464,636	14,403,716
Texas	420,886	13,047,466
Arkansas	114,953	3,564,473
Louisiana	58,307	1,807,517
Total March	1,149,926	35,647,706
Total February	1,153,783	32,305,924
	3,857	3,341,782

The same States in March, 1924, produced 1,070,065 bbls. a day or a total of 33,172,068 bbls., indicating an increase in March this year of 79,861 bbls. per day or 2,475,638 bbls. for the month.

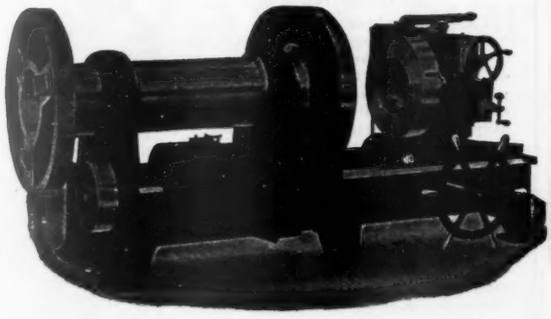
KANSAS
Daily Average and Monthly Production in March, 1924

	Daily	Monthly
Marion County:		
Florence	1,180	36,580
Peabody	2,527	78,337
Covert-Sellers	961	29,791
Total	4,668	142,708
Butler County:		
Elbing	3,442	106,702
Potwin	730	22,630
Cameron-Robinson	660	20,460
Wilson-Dunkle	2,092	64,852
Towanda	3,159	97,929
El Dorado	6,670	206,770
Fox-Bush	2,642	81,902
Nuttle-Koogler	1,509	46,779
Sluss	446	13,826
Blankenship	1,066	33,046
North Augusta	1,252	38,812
South Augusta	2,227	69,037
Smock	248	7,688
Douglas	174	5,394
Leon-Weaver	850	26,350
Total	27,167	842,277
Greenwood-Woodson:		
Virgil	4,774	147,994
Seeley	4,864	150,784
Thrall-Burkett	5,670	175,840
Sallyards	1,716	53,196
Polhamus	3,198	99,138
Teeter	5,407	167,617
Miscellaneous	238	7,378
Total	25,876	802,136
Cowley County:		
Rainbow Bend	11,058	342,798
Slick-Graham	3,176	98,456
Rock (Twp. 30-4)	486	15,065
Clark (Twp. 31-3)	170	5,270
Eastman (Twps. 30-6, 31-6)	1,346	41,726
Winfield (Twps. 32-4, 32-5)	2,044	63,364
Miscellaneous	476	14,756
Total	18,755	581,435
Other Counties:		
Rice	81	2,511
Russell	1,513	46,872
Harvey	122	3,782
Chautauqua	2,573	79,763
Elk	1,016	31,496
Wilson	306	9,486
Montgomery	3,466	107,446
Allen	1,309	40,579
Neosho	766	23,746
Lyon	77	2,387
Miami	590	18,290
Franklin	593	18,383
Douglass	44	1,364
Bourbon	43	1,333
Linn	435	13,485
Anderson	1,661	51,491
Labette	83	2,573
Total	14,848	454,091
Total March	91,114	2,824,534
Total February	88,095	2,466,660
Difference	3,024	357,874

OKLAHOMA
Daily Average and Monthly Production in March, 1925

	Daily	Monthly
Washington County	6,059	187,830
Nowata and Rogers	5,516	170,996
Osage and Eastern Kay Counties:		
Burbank	56,432	1,749,392
Osage, outside Burbank	34,160	1,058,960
Total	90,592	2,808,352
Tulsa County:		
Bird Creek, Owasso, etc.	3,971	123,101
Red Fork, Sand Springs, Bruner, Turkey Mountain and Fisher	3,168	98,166
Bixby, Leonard and Jenks	1,801	55,831
Broken Arrow and Coweta*	1,327	41,120
Total	10,266	318,218
Okmulgee-Muskogee Counties:		
Mounds, Beggs, Hamilton Switch, Youngstown	11,498	356,438
Bald Hill and Haskell	2,356	73,036
Morris, Boynton and Cole	2,616	81,096
Okmulgee	2,524	78,244
Tiger Flats, Henryetta and Schulter	3,189	97,959
Total	21,133	655,133
Okfuskee, Seminole and Hughes Counties:		
Deaner-Lyons	4,550	141,050
Wewoka	10,878	337,218
Cromwell	32,610	1,010,910
Papoose-Gilcrease	29,260	907,060
Okemah	244	7,564
Welectka	2,350	72,850
Wetumka	65	2,015
Yeager	450	13,950
Total	80,407	2,493,617
Creek County:		
Cushing-Shamrock	21,899	678,869
Glenn Pool, Sapulpa and Kiefer	9,087	280,797
Bristow, Kellyville and Depew	26,115	809,565
North Bristow (Twp. 17-8)	3,006	93,186
East Bristow or Slick	7,144	221,464
Total	67,231	2,083,851
Pawnee County:		
Cleveland	3,107	96,317
Keystone	1,096	33,976
Jennings	5,290	163,990
Otoe or Watchorn	9,171	284,301
Masham	125	3,875
Total	18,789	582,459
Payne County:		
Yale, Quay and Ingalls	4,668	144,708
North Cushing or Pool	1,255	38,905
Total	5,923	183,613
Lincoln County:		
Stroud	3,360	104,160
Davenport	1,130	35,030
Kendrick	33	992
Total	4,523	140,182
Kay, Grant and Noble Counties:		
Blackwell	2,480	76,880
Deer Creek	104	3,220
Ponca City	960	29,760
Mervine	437	13,547
Braman	2,285	70,835
Hubbard	762	23,622
Thomas	266	8,246
Tonkawa	77,962	2,416,822
Billings	401	12,431
Total	85,658	2,656,305
Garfield County:	5,307	164,517
Garber		
Carter County:		
Healdton	15,262	473,122
Hewitt	15,787	489,497
Graham	10,343	320,643

(Continued on Page 146)



Service and Satisfaction *since seventy-seven*

Compare this pipe threading machine with the ones you are using. A small investment in up-to-date equipment will pay big dividends in reduced upkeep.

Speed and accuracy in threading pipe, casing and bolts are built into every one of our machines.

Investigate thoroughly now

BIGNALL & KEELER MACHINE WORKS, of the N. O. NELSON MANUFACTURING CO.
Edwardsville, Illinois

Why You Should *Not* Order Just "A Chain Hoist"

All hoists are capable of lifting—
They all look more or less alike—
They all cost about the same—

But
if you simply insert the words

WRIGHT HOIST

after the word "A" you will receive one that is built entirely different from all others—you will receive one with a regular internal oiling system — a ball bearing detachable swivel load hook—two supplementary steel arms—ball bearing steel driving pinion, etc., etc.—too many exclusive features to get into this space.

And they cost no more.

May we send you our "family tree"?

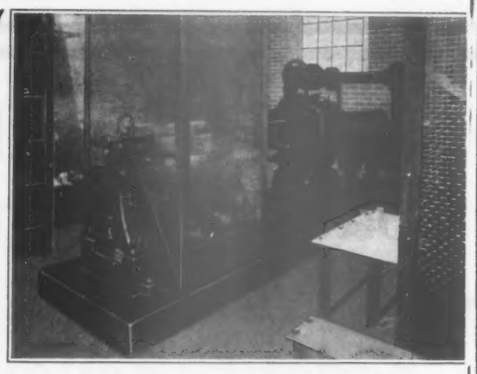
It's Eclipsing all others

and it will soon be a Total Eclipse

WRIGHT

Kinney

Depend upon it it's a Kinney Pump



Steady Continuous Service

—hour after hour, day after day,—requiring little or no attention, giving a steady consistent flow of the heaviest crudes, asphalt, tar and all vicous and bituminous products. When you find this condition, it is more than an even chance that it is a KINNEY PUMP.

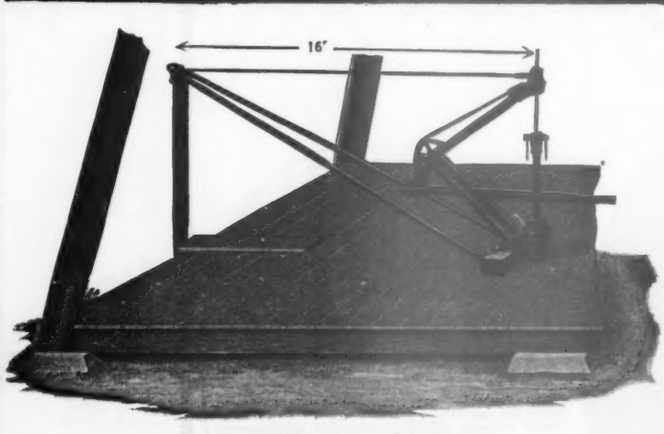
Thousands of KINNEY PUMPS are telling the same story of consistent efficiency in refineries that dot the map of the United States and foreign fields. Low cost operation, low cost maintenance, trouble-proof service under all conditions,—these are the reasons why so many plants are depending upon KINNEY PUMPS—and why it would be profitable for you to investigate this pump in both its types—steam jacketed and plain.

Let Us Send You Data

KINNEY MANUFACTURING COMPANY
Boston, Mass.

Philadelphia
Chicago
New York
Kansas City
Huuston
San Francisco
Los Angeles

LIGHTNING OIL FIELD SUPPLIES
PUMPING POWERS, JACKS, STUFFING BOXES, ETC.



LIGHTNING JACKS

The Jack that takes the place of the Beam Pump

ADVANTAGES:

Simplicity
Wide Range of Adjustment
Special Oiling Features
Lateral Adjustment
Simple to Install
More Oil Pumped

Longest stroke without use of Multiplier

Oil Field Supply Department

KANSAS CITY HAY PRESS CO., Kansas City Mo.

Mexican Shipments In March Increase 1,438,938 Barrels

By George Blardone

TAMPICO, Mex., May 1. — Shipments of petroleum from Mexican ports of primary clearance during the month of March totaled 11,422,975 bbls., an increase over February of 1,438,938 bbls., but a decrease from the movement in March one year ago of 1,677,438 bbls.

The feature of the month's movement was the heavy increase in the shipments of Huasteca Petroleum Co. (Mexican Petroleum), which smashed all its previous records, having dispatched last month 4,077,929 bbls. Transcontinental Petroleum Co. was second in the list with something under 3,000,000 bbls. Mexican Eagle Oil Co. dispatched over 1,500,000 bbls., and all other major shippers were under the 1,000,000-bbl. mark.

The heavy oils in the above list totaled 7,158,282 bbls.

The movement in detail follows

FROM TAMPICO

By Huasteca Petroleum Co.
(Mexican Petroleum)

Mar.	Rig	Vessel, Destination—	Bbls.
1	Ss.	E. L. Doheny III, Providence	*75,037
1	Ss.	Cerro Ebano, Rio Janeiro..	*76,383
1	Ss.	Cerro Ebano, Rio Janeiro..	†3,837
1	Ss.	Fred. Ewing, New Orleans	69,126
1	Ss.	J. O. Boyd, New Orleans..	†19,372
3	Ss.	Mendocino, Philadelphia ..	62,249
4	Ss.	Meline, Boston	*61,901
4	Ss.	W. L. Steed, New Orleans	†75,266
4	Ss.	Panoil, Miami	*14,281
5	Ss.	Nora, Providence	*74,447
5	Ss.	Mirlo, Boston	*63,361
6	Ss.	S. M. Spalding, New Orleans	71,997
6	Ss.	Norman Bridge, Tampa ..	*41,166
7	Ss.	F-Sulphur 6, Houston	*40,461
7	Ss.	Wm. Green, New Orleans..	66,663
9	Ss.	Dean Emery, New Orleans	72,046
9	Ss.	Mexoil, Miami	*14,754
9	Ss.	C. A. Canfield, Portland...	*59,200
10	Ss.	G. G. Henry, New Orleans	†74,016
11	Ss.	I. C. White, Boston	*66,726
11	Ss.	W. H. Doheny, Galveston..	*66,436
11	Ss.	H. G. Wylie, Jacksonville.	*41,694
12	Ss.	Mantilla, Portland	*62,347
12	Ss.	Fred Ewing, New York ..	*63,226
12	Ss.	F. K. Lane, New Orleans.	70,351
12	Ss.	Fueloil, Miami	*14,215
13	Ss.	Montana, Philadelphia ...	63,005
13	Ss.	J. M. Danziger, Panama..	*67,764
13	Ss.	Trimountain, Galveston ...	*63,855
13	Ss.	Cedarhurst, Galveston	*42,718
14	Ss.	F-Sulphur 6, Houston	*40,546
14	Ss.	J. O. Boyd, New Orleans..	†18,930
15	Ss.	C. E. Harwood, New Orleans	†35,054
16	Ss.	Harold Walker, New Orleans	73,616
16	Ss.	Panoil, Miami	*14,260
16	Ss.	S. M. Spalding, Boston ...	*65,013
17	Ss.	E. L. Doheny, New York..	*59,929
17	Ss.	Cerro Azul, Providence ..	*76,014
18	Ss.	F. R. Kellogg, New York.	*63,675
18	Ss.	W. H. Doheny, Galveston.	*67,169
18	Ss.	Norman Bridge, Port Tarafa, Cuba	*40,876
19	Ss.	Wm. Green, New Orleans.	71,125
19	Ss.	Texas, Texas City	*63,556
19	Ss.	Wm. Isom, Baltimore ...	31,251
20	Ss.	P. H. Harwood, Boston ..	*64,977
21	Ss.	Invergoil, Liverpool	*57,562
22	Ss.	Oina, Liverpool	*59,286
23	Ss.	E. L. Doheny III, Rio J. & Santos	*81,838
23	Ss.	G. G. Henry, New Orleans	†74,925
23	Ss.	E. L. Doheny, Jr., New York	*75,860
24	Ss.	F. K. Lane, New Orleans.	65,447
24	Ss.	C. E. Harwood, New Orleans	†34,837
25	Ss.	W. H. Doheny, New Orleans	69,746
25	Ss.	Mexoil, Miami	*14,761
25	Ss.	H. G. Wylie, Tampa	*41,103
26	Ss.	Dean Emery, Montevideo.	*64,886
26	Ss.	C. Anderson, New Orleans	†78,835
26	Ss.	Fueloil, Miami	*14,414
27	Ss.	Elisha Walker, Boston ...	*66,652
27	Ss.	Mirlo, New York	*64,673
27	Ss.	Nora, Providence	*73,271
27	Ss.	J. O. Boyd, New Orleans.	†19,112
28	Ss.	J. M. Danziger, New Orleans	76,739
29	Ss.	Mendocino, New York	*64,561
29	Ss.	Meline, Philadelphia	59,833
29	Ss.	F-Sulphur 6, Houston	*40,991
30	Ss.	O. D. Bennett, New Orleans	†52,220
31	Ss.	Wm.Green, New Orleans ..	72,392
31	Ss.	Norman Bridge, New York	*41,491
31	Ss.	C. A. Canfield, New York..	59,932
		Bunker deliveries	218,644
		Total	4,077,929

By Transcontinental Petroleum Co.

Mar.	Rig	Vessel, Destination—	Bbls.
1	Ss.	S. B. Hunt, Ponce & Guanica	45,204
1	Ss.	S. B. Hunt, Ponce & Guanica	*19,881
1	Ss.	Malabar, Baton Rouge ...	67,633
2	Ss.	Princeton, Port Tampa ...	48,670
3	Ss.	L. J. Drake, Jacksonville.	56,759
3	Ss.	Eurana, Antilla & Havana	61,684
3	Ss.	Mevania, Baltimore	64,437
4	Ss.	F-Sulphur 1, Banes, Cuba.	18,438
4	Ss.	Dora, Key West	44,369
5	Ss.	Cape Ann, Baltimore	61,938
6	Ss.	Cape Cod, Charleston	64,458
6	Ss.	Albertolite, New York	62,289
6	Ss.	Ardmore, New York	71,787
7	Ss.	Vistula, New York	82,642
8	Ss.	Mary Luckenbach, Santiago & Cienfuegos	49,197
9	Ss.	Pioneer, Nuevitas & Mantanzas	46,230
9	Ss.	T. J. Williams, Boytown..	73,628
10	Ss.	Vancolite, New York	82,699

Brown Duplex Continuous Recording Electric Pyrometer.

The Dependable Temperature Measure

Simple as a clock—Accurate—and always on the job.

No wonder that refinery men everywhere—the men responsible for big gasoline fields, put their trust in Brown Electric Pyrometers. Brown's have earned their confidence by constant, faithful service, day in and day out, on every kind of application. And remember, when it is necessary Brown Electric Pyrometers can be adjusted.

Why not make use of our years of experience in seeing the Oil Field? We invite your inquiries on all matters touching temperature control.

Wiring can be repaired, or a thermocouple changed, quickly —right on the spot.

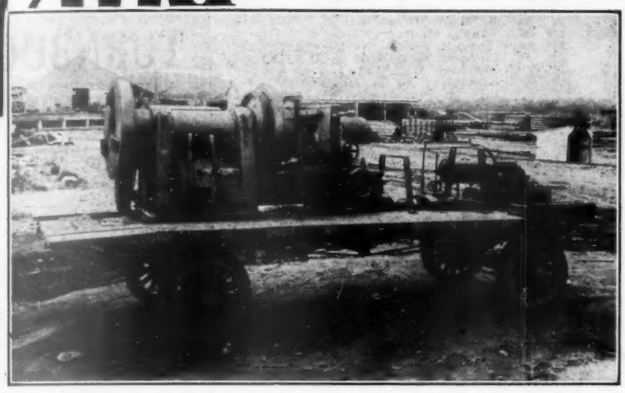
Address — The Brown Instrument Company, 4536 Wayne Avenue, Philadelphia, Pa., or one of our district offices in New York, Boston, Pittsburgh, Detroit, Chicago, Birmingham, Houston, Tulsa, St. Louis, Denver, Salt Lake City, San Francisco, Los Angeles or Montreal.

Brown Pyrometers

Most Used in the World

Standard pipe cutters and threaders

Wieland



One of a number of Standard Pipe Threaders in use in the Texas fields.

Photograph shows installation of Texas Pacific Coal & Oil Co., Thurker, Texas.

The rough and ready characteristics of the STANDARD Pipe Threader and its undeniable ability to "deliver the goods" under the most exacting conditions, qualifies it for the most strenuous oil field work.

Deeper and sharper threads, more cleanly cut than is possible with an ordinary pipe threader, are assured by the STANDARD. Its economical operation and lack of complicated parts makes the STANDARD a prime favorite with the practical oil field operator wherever it is in use.

The story of the STANDARD WIELAND will be found in the STANDARD Bulletins.

Standard Engineering Co.
Ellwood City, Pa.
San Francisco Office: 1803 Claus Spreckels Bldg.

AN INTERESTING LETTER FROM A TOOL DRESSER IN TEXAS

Desdemona, Texas
November 28, 1919

Donovan Boiler Works,
Parkersburg, W. Va.
Gentlemen:

Will you kindly send me some information relative to boilers in general and your boiler in particular?

I have been employed as a tool dresser for several months and it has been my experience that, when the tools were pulled from the well rapidly, the water would pull over from the boiler to the engine, provided one was carrying three gauges; that at the same time while tools were being pulled from any considerable depth, steam pressure would fall 20 to 30 pounds.

The well at which I am now working has a DONOVAN boiler, the first I've seen. The first time I pulled the tools rapidly from about 2,800 feet, I found when examining the boiler, immediately afterward, water in the third gauge and a decrease in pressure of about 5 lbs., i. e., from 120 to 115 lbs. I was much impressed and surprised.

The boiler in question has 60 flues 10' in length; the engine used is a 12"x12" Acme. The contractor informs me that the boiler is a 40 H.P., the engine a 28 H.P. Even when raising the tools from 2,800 feet a 10-lb. decrease in pressure has been the maximum.

The dome is taller than that on the other boilers of its size, which I have noticed, otherwise I see no apparent difference.

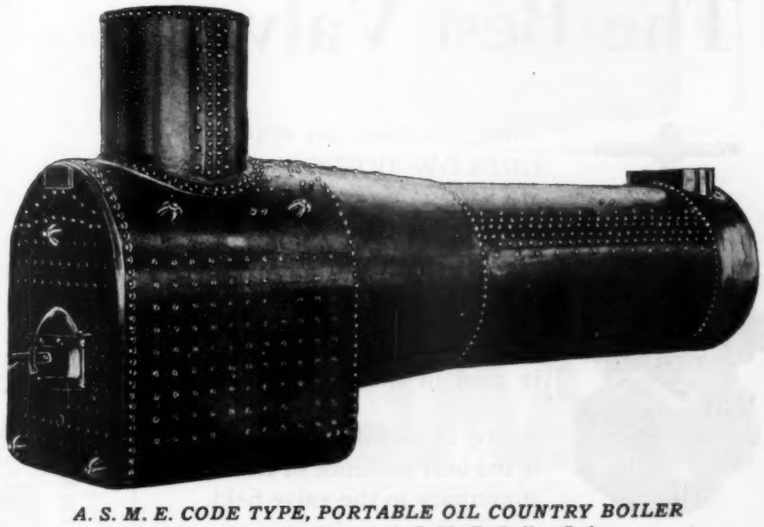
Information on the subject will be appreciated, I find that about some matters, questioning more experienced men in the field is rather fruitless. Facts are accepted; the wherefores and whys are ignored.

Respectfully,

(Signed) H. H. Wilson.

Care Gen. Del'y

Note:—Mr. Wilson no doubt has long since been running his own drilling tools.



A. S. M. E. CODE TYPE, PORTABLE OIL COUNTRY BOILER
Built to Specifications of A. S. M. E. Boiler Code

Frick-Reid Supply Company
Sole Distributors West of Mississippi River
Handled by leading supply companies throughout Eastern Fields
DONOVAN BOILER WORKS, Inc., PARKERSBURG, W. VA.
New York Office: 30 Church St.

Economy!

TRUE Economy in producing and refining Equipment is found only in long years of efficient service.

"United" Equipment is so designed and manufactured as to stand a maximum of hard wear and abuse.

Send us your inquiries for

Tankage
Stills
Towers
Fittings
Castings
Forgings

"United" Products "stand the gaff" year after year because only the best of material and workmanship are worthy of and go into them.

A Valuable Service

Our Engineers are at your service, ready to counsel and advise with you regarding your requirements. This service is free and without obligation.

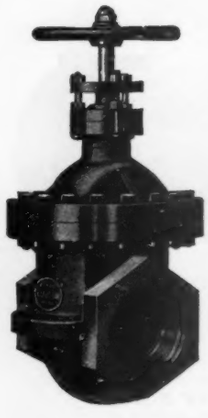
UNITED IRON WORKS

INCORPORATED

KANSAS CITY

TULSA DALLAS

You Are Buying The Best Valves



when you place an order for LUDLOW DOUBLE GATE VALVES.

The principle of operation is simple and correct. The material is the best that can be used and the proper material is used in the proper places.

Years of satisfactory service is the best evidence of Ludlow supremacy in the valve field.

THE LUDLOW VALVE MFG. CO.

(Established 1869)

Factory: Troy N. Y.

Branch Offices:

Kansas City, Mo.; Chicago, Ill.; Pittsburgh, Pa.; Boston, Mass.

11	Ss.	Glenpool, Baytown	52,092
12	Ss.	Victolite, New York	51,518
12	Ss.	Hampton Roads, New York	63,730
13	Ss.	Malabar, New York	69,630
13	Ss.	Dora, Jacksonville	49,383
13	Ss.	Princeton, Port Tampa	48,912
13	Ss.	Ball Butte, New York	61,005
15	Ss.	Cecil County, Baltimore	64,251
16	Ss.	E. C. Bedford, Panama	*79,510
16	Ss.	L. J. Drake, Jacksonville	57,103
17	Ss.	Gedania, New York	52,806
17	Ss.	Imlay, Baltimore	64,633
18	Ss.	Durango, Charleston	65,721
18	Ss.	Glenpool, Baytown	51,700
18	Ss.	Eurana, New York	61,490
19	Ss.	Dillwyn, New York	64,422
19	Brg.	Socony 83, Providence	36,386
19	Ss.	Brilliant, Providence	18,500
20	Ss.	Vsaril, Maurer, N. J.	57,394
21	Ss.	Clement Smith, New York	64,976
23	Ss.	Pioneer, Key West	47,931
26	Ss.	Glenpool, Key West	42,530
26	Ss.	F-Sulphur 1, La Romana, D. R.	18,008
27	Ss.	Albertolite, Halifax	77,349
27	Ss.	Dora, Boqueron & Cienfuegos	50,100
28	Ss.	Vistula, New York	87,480
29	Ss.	L. J. Drake, Jacksonville	58,120
31	Ss.	Zoppot, New York	95,888
31	Ss.	Jascalusa, Tocopilla	39,996
		Bunker deliveries	123,149
		Total	2,847,706

By Mexican Eagle Oil Co, Ltd.

Mar.	Rig	Vessel, Destination—	Bbls.
2	Ss.	San Macedonio, Lizard f/o	*56,175
4	Ss.	San Florentino, Devonport	*94,967
5	Ss.	Bussum, South America	†16,335
11	Ss.	San Fernando, B. Aires & Mont.	*89,918
12	Ss.	San Silvestre, London	*34,766
13	Ss.	San Zotico, New York	*50,974
16	Ss.	Santa Alicia, P. Barrios & Belize	†3,300
20	Ss.	San Teodoro, Buenos Aires	*60,276
21	Ss.	San Lamberto, New York	*54,325
27	Ss.	San Manuel, Lizard f/o	*51,655
27	Ss.	San Patricio, Devonport	*92,271
27	Ss.	Wordsworth, Argentine	†16,196
27	Ss.	San Leopoldo, Rio Janeiro	*24,897
27	Ss.	San Leopoldo, Rio Janeiro	†28,378
28	Ss.	San Lorenzo, Lizard f/o	*82,620
29	Ss.	San Rosendo, Barton, U. King.	*37,185
30	Ss.	San Ugon, B. Aires & Rosario	†59 088
		Coastwise deliveries	†25,381
		Coastwise deliveries	*368,264
		Bunker deliveries	97,659
		Total	1,344,630

By Mexican Sinclair Petroleum Corp.

Mar.	Rig	Vessel, Destination—	Bbls.
2	Ss.	E. W. Sinclair Nuevitas	44,319
4	Ss.	A. E. Watts, Matanzas	68,666
4	Ss.	Harry Farnum, New Orleans	34,500
5	Ss.	E. V. R. Thayer, Havana	68,791
6	Ss.	J. F. Farrell, New Orleans	68,068
7	Ss.	Madrono, New Orleans	56,008
8	Ss.	W. L. Connelly, Nuevitas	32,797
13	Ss.	Gene Crawley, Port Barrios, C. A.	32,293
14	Ss.	A. E. Watts, Cienfuegos	70,027
16	Ss.	E. W. Sinclair, New Orleans	45,893
16	Ss.	E. V. R. Thayer, New Orleans	68,484
17	Ss.	Madrono, Tiverton	56,756
23	Ss.	J. F. Farrell, Cienfuegos	69,694
24	Ss.	W. L. Connelly, New Orleans	32,940
25	Ss.	Harry Farnum, Manati, Cuba	30,376
27	Ss.	A. E. Watts, New Orleans	72,473
27	Ss.	Gene Crawley, Port Barrios, C. A.	32,367
		Total	884,452

Cia. Mexicana Holandesa La Corona, S. A.
(Royal Dutch-Shell)

Mar.	Rig	Vessel, Destination—	Bbls.
4	Ss.	Virginia, Port Arthur	63,189
4	Ss.	Camden, Panama	*59,952
4	Ss.	Absia, New York	*45,531
9	Ss.	Lacuna, Holland	47,600
10	Ss.	Ansaldo III, St. Nazaire & Rouen	*40,887
11	Ss.	Scot. Musician, Holland	*55,654
17	Ss.	British Beacon, New Orleans	*62,550
19	Ss.	La Crescenta, Boston	51,513
21	Ss.	Camden, Panama	*60,011
26	Ss.	Absia, Havre & Hamburg	*45,768
27	Ss.	Texas, Port Arthur	61,153
29	Ss.	Maricopa, New York	61,379
		Bunker deliveries	65,179
		Total	720,366

By East Coast Oil Co.

Mar.	Rig	Vessel, Destination—	Bbls.
1	Ss.	Tamiahua, Galveston	55,398
7	Ss.	Torres, New Orleans	51,395
17	Ss.	F-Sulphur 1, Freeport	19,208
18	Ss.	Torres, New Orleans	51,338
24	Ss.	F-Sulphur 6, Freeport	29,118
29	Ss.	Torres, New Orleans	51,621
		Bunker deliveries	4,555
		Total	296,133

By Mexican Gulf Oil Co.

Mar.	Rig	Vessel, Destination—	Bbls.
1	Ss.	Ligonier, Galveston	30,435
5	Ss.	J. M. Guffey, Galveston	19,720
7	Ss.	Ligonier, Savannah	30,207
9	Ss.	Winifred, Port Tampa	18,698
11	Ss.	Gulfstate, Port Arthur	67,726
13	Ss.	J. M. Guffey, Galveston	19,534
19	Ss.	Winifred, Port Tampa	18,564
22	Ss.	Ligonier, Savannah	29,911
30	Brg.	Shawnee, Port Arthur	320
31	Ss.	Winifred, Galveston	18,839
		Bunker deliveries	27,920
		Total	281,874

By The Texas Co.

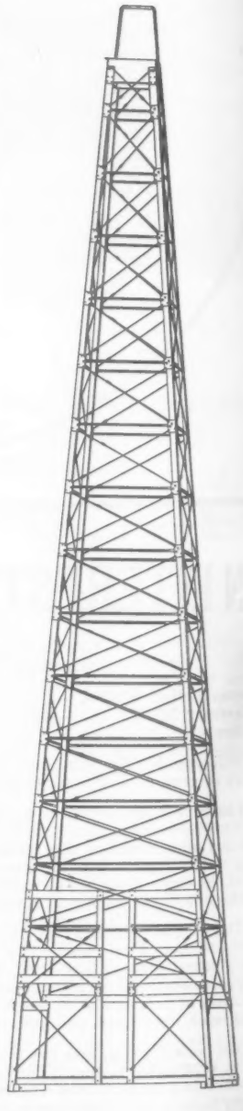
Mar.	Rig	Vessel, Destination—	Bbls.
6	Ss.	Louisiana, Cienfuegos	25,949
12	Ss.	Virginia, Providence	*55,554
18	Ss.	Louisiana, Matanzas etc.	26,165
27	Ss.	Pennsylvania, Bayonne	*52,469
31	Ss.	Louisiana, Port Neches	7,832
31	Ss.	Louisiana, Port Neches	†19,512
		Bunker deliveries	10,747
		Total	198,228

By Mexican Oil Products Corp.

Mar.	Rig	Vessel, Destination—	Bbls.
4	Ss.	Tulsagas, New York	62,497

SLATER BROS.

TURNBUCKLE DERRICK CO.



STANDARD DERRICK
80′ Legs 8″x8″ or 10″x10″

ROTARY
115′ Legs 8″x8″ or 10″x10″
122′ Legs 10″x10″

OFFICE AND FACTORY
SAND SPRINGS, OKLA.
PHONE 91

High Prices

Ames Brand Scoops are being repeatedly ordered by a large Western Company who finds the same life in **Ames Brand Scoops** as they formerly secured from a tool costing 40 per cent more.

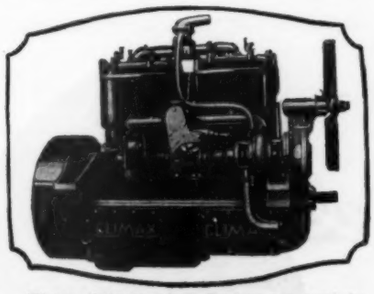
You can't go wrong on

"O. Ames" BRAND Shovels Spades Scoops

Distributed throughout the United States by the foremost dealers only.

OLIVER AMES & SONS CORP.,
NORTH EASTON, MASS.
(Ames Shovel and Tool Co., Boston, Owners)

Rarin' to GO



Climax "Trustworthy" Engines are used by most leading manufacturers of industrial machinery.

There's a lot of the Spirit of the West in every Climax Engine. They are always "rarin' to go." No job ever seems tough enough to stop them. No conditions of temperature or fuel seem to phase them. They abound with built-in pep and power that in men we call vitality; in horses, stamina; in engines it's Trustworthiness.

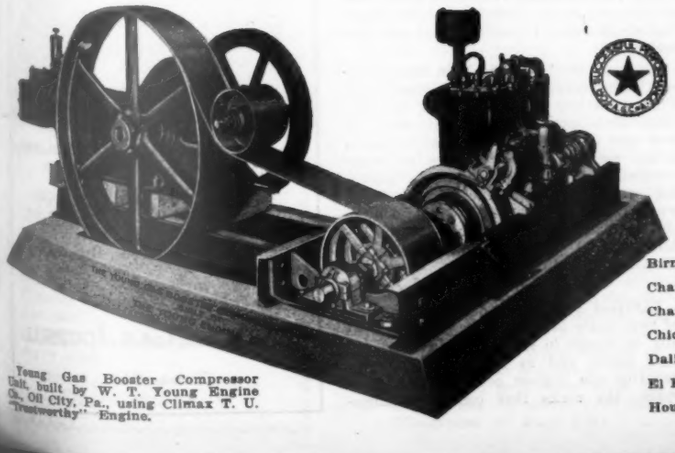
That's why Climax Engines are first on the job in the morning, and the last to quit at night.

Most manufacturers of industrial machinery now equip with—

CLIMAX

The "Trustworthy" Engine
(Trade Mark Reg. U. S. Pat. Off.)

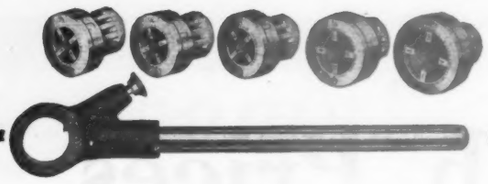
Made by
Climax Engineering Co., 32 W. 18th Ave., Clinton, Iowa
Also Builders of Climax Refrigerating Units
Mid-Continent Field Headquarters: Tulsa, Okla., Wells Hotel.
California Field Headquarters: Los Angeles, Calif., 1001 N. Orange Drive, Hollywood



Young Gas Booster Compressor Unit, built by W. T. Young Engine Co., Oil City, Pa., using Climax T. U. "Trustworthy" Engine.

Sales and Service Stations also in the Following Cities:

Birmingham, Ala.—Keiser-Geismer Engr. Co., 1308-9 American Trust Bldg.
Charleston, W. Va.—Beckwith Machinery Co., 311 Moore Bldg.
Chattanooga, Tenn.—Mills & Lupton Supply Co., 1146 Market St.
Chicago, Ill.—Climax Engineering Sales Co., 610 W. Randolph St.
Dallas, Texas—W. A. Browning Machinery Co., 303-5 Exposition St.
El Paso, Texas—Sheehan & Co., 1615 Bassett Ave.
Houston, Texas—F. W. Gartner Co., 3315 McKinney Ave.
Indianapolis, Ind.—Carl Dunning Supply Co., 828 Lemcke Bldg.
Louisville, Ky.—Brandeis Machinery & Supply Co., 325 W. Main St.
Pittsburgh, Pa.—Beckwith Machinery Co., Corner Front and Brown Sts.
Portland, Ore.—Coast Steel Machinery Co., 1 Porter St.
St. Louis, Mo.—Tulley Equipment Co., 508-9 Title Guaranty Bldg.
San Francisco, Calif.—Edward R. Bacon Co., Inc., Folsom at 17th St.
Seattle, Wash.—Pacific Hoist & Derrick Co., 818 1st Ave. South.



A "TOLEDO" TOOL

That Gets the Corner Job Easily.

The "TOLEDO" No. 00 ratchet tool for threading ⅛" to ¼" pipe is "JUST RIGHT" for these sizes.

It is so light it can be carried in the pocket, and so compact it reaches the out-of-the-way job easily and cuts perfectly true tapered threads, assuring tight joints.

Dies are removable and may be reground when dull, or replaced at small expense.

It is the tool you need for threading that small pipe.

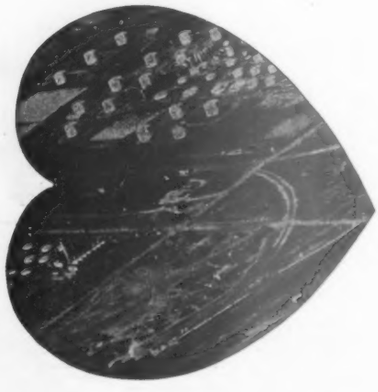
Your jobber can supply you, or a postcard to us will bring you complete details and prices.

Just a snap of the Pawl and Die Heads are changed instantly

Buy by Comparison and You'll Buy a

"TOLEDO"

THE TOLEDO PIPE THREADING MACHINE CO.
Toledo, Ohio
NEW YORK OFFICE, 50 CHURCH ST.



Our Five Acre Plant located in the heart of the refining district of the Mid-Continent. One reason every employe knows how refining equipment should be built.

Tulsa Boiler & Machinery Co.

SHOPS LOCATED AT
WEST TULSA

P. O. Address
Box 1963, Tulsa

Phones
33000 and 9919

26	Ss.	Caloria, La Ceiba, C. A....	31,557
		Total	94,054

By Panuco Boston Oil Co.

Mar. Rig	Vessel, Destination—	Bbls.
24	Ss. San Valerio, Philadelphia..	58,544

By Interocean Oil Co.

Mar. Rig	Vessel, Destination—	Bbls.
30	Ss. Georgia, Port Arthur	48,821

FROM PORT LOBOS

By Transcontinental Petroleum Co.

Mar. Rig	Vessel, Destination—	Bbls.
7	Ss. Albertolite, New York.....	22,697
9	Ss. Vistula, New York	7,746
12	Ss. Vancolite, New York	20,344
13	Ss. Victolite, New York	22,210
18	Ss. Gedania, New York	7,551
	Total	80,548

FROM TUXPAM

By Mexican Eagle Oil Co., Ltd.

Mar. Rig	Vessel, Destination—	Bbls.
5	Ss. San Florentino, Devonport.	*12,371
13	Ss. San Fernando, B. Aires...	*17,310
27	Ss. San Patricio, Devonport...	*4,110
29	Ss. San Lorenzo, Lizard f/o..	*20,917
	Coastwise deliveries	379,867
	Bunker deliveries	55,115
	Total	489,690

MARCH SUMMARY

From—	Bbls.
Tampico	10,852,737
Port Lobos	80,548
Tuxpam	489,690
Total March, 1925	11,422,975
Total March, 1924	13,100,413
Decrease March, 1925	1,677,438

DIVISION OF MOVEMENT

To—	Bbls.
United States	7,507,943
Mexican Coastwise	773,512
Cuba, etc.	721,317
United Kingdom	603,885
South America	579,338
Panama	267,237
Continent	189,909
Central America	99,517
Canada	77,349
Bunkers (to balance)	602,968
Total	11,422,975

CLASSES

Crudes	3,986,225
Topped crudes	4,179,183
Distillates	654,594
Bunkers (to balance)	602,968
Total	11,422,975

*Denotes topped crudes.
†Denotes distillates.

30,000 Bbls. Oil Per Acre Left in Bradford Sand After Flooding

(Studies by Government Geologists)

Studies of well cores of oil sand, continuous from the top to the bottom of the bed, are valuable not only for the light they shed on the migration and accumulation of oil in general but also because they furnish the precise information about the rocks of oil reservoirs that is essential to any improvement in the methods of oil recovery.

The Northwestern Producers Association of Pennsylvania and the Forest Oil Co., of Bradford, Pa., have cooperated with the Department of the Interior through the Geological Survey by furnishing cores of the oil sands in the Bradford and Bolivar oil fields in northwestern Pennsylvania and southwestern New York. The Northwestern Producers Association, by private subscription among its members, took a core of the Bradford oil sand from a well half a mile west of Custer City, Pa. The Forest Oil Co. furnished cores of the same sand from a well about 8 miles east of Bradford, Pa., and of a similar sand from two wells in the Bolivar district, New York. The core from the well near Custer City and parts of one of the cores from the Bolivar district have been studied by A. F. Melcher, of the Geological Survey, Department of the Interior.

In some of the oil fields in northwestern Pennsylvania and southwestern New York a method of extracting oil is practiced that increases the total yield by flow and pumping 100 per cent or more. After wells cease to produce oil commercially by natural flow or by pumping, water is let into the oil sand. This water under pressure moves slowly through the sand and drives the oil before it, and the neighboring wells are thus rejuvenated.

Pore Space in Sand

Different rocks have different amounts of pore space between their grains. Usually oil occurs in rocks that have a large pore space, and as sandstone generally contains the highest proportion of pore space, the rocks that contain commer-

For Sale Leases and Production

Lease or Production in the following States and counties can be purchased at reasonable prices.

OKLAHOMA
County—
Grant
Grady
Greer
Creek
Payne

TEXAS
County—
Liberty
Hutchinson
Carson
Moore
Roberts
Culbertson
Cooke
Montague
Pecos
Crockett
Upton
Irion
Loving

TENNESSEE
County—
Clay
Macon

KENTUCKY
County—
Allen
Monroe
Barren
Cumberland
Metcalfe
Warren

WYOMING
County—
Lincoln

NEW MEXICO
County—
Eddy
Chaves
Lea
San Juan
Colfax

COLORADO
County—
Rio Blanco
Routt

OHIO
County—
Ashland

LOUISIANA
County—
Jefferson Davis
Parrish

For full particulars turn to the Classified Wants Section.

Some of the largest producing companies were started through a Classified Advertisement. You have the same chance.

The Oil and Gas Journal
Tulsa, Okla.

K & E
Steel Tapes
for *exact* measurements

GUARANTEED Accuracy and easy operation make K & E Tapes the logical ones to use. Our "Keco" *rust-resisting finish,* increases the life of the tape line.

The illustration shows our

No. 7142-T for Oil Gauger's use.

We carry tapes for gauging both *high* and *low* gravity oils.

Tape Catalog Free
Send for It Today!

KEUFFEL & ESSER CO.
NEW YORK, 127 Fulton Street, General Office and Factories, HOBOKEN, N. J.
CHICAGO ST. LOUIS SAN FRANCISCO MONTREAL
Drawing Materials, Mathematical and Surveying Instruments, Measuring Tapes

TANK
CARS
FOR RENT, SALE OR EXCHANGE

Having increased our fleet, we have a good supply of cars, both clean and dirty, for prompt release—various locations—on Long or Short Term Rental.

Wire Your Requirements

SHIPPERS' CAR LINE, INC.
165 Broadway New York, N. Y.

Not Costly!

$3.50 will pay for inserting a five-line advertisement in the Classified Wants Section for one month.

20,000 or more readers study it every week.

Classified Wants Section
"Biggest in America"

cial deposits of oil and gas are commonly sandstones.

Determination of porosity in a core of the Bradford oil sand from a well on the Bryner-Jackson property, about half a mile west of Custer City, Pa.:

Depth in Feet	Percentage of Pore Space by Volume
1,230.2	1.4
1,231.0	4.2
1,233.0	2.9
1,235.5	3.2
1,236.5	4.6
1,238.3	12.3
1,238.8	13.1
1,239.3	4.3
1,239.6	9.5
1,240.4	17.3
1,242.0	16.5
1,245.2	14.0
1,246.2	16.5
1,247.7	14.2
1,248.7	15.1
1,254.7	15.1
1,255.3	15.6
1,258.8	15.5
1,260.4	16.3
1,260.8	6.3
1,264.0	16.4
1,264.4	15.5
1,267.8	15.6
1,268.7	4.8
1,269.7	11.5
1,270.3	14.0
1,271.5	6.0
1,273.8	14.1
1,275.0	5.6
1,276.1	10.3
1,279.0	15.1
1,281.0	16.2
1,283.2	13.0
1,283.8	8.1
1,288.3	5.0
1,292.3	9.3

Between the depths of 1,240 and 1,269 feet, the porosity in greatest and most uniform, and it appears likely that this is the most productive portion of the oil sand.

Rocks With Low Porosity

In any oil sand there appears to be a fairly definite lower limit of porosity beyond which no oil can be produced by the present methods of recovery. The lower limit of porosity for commercial production from the Hickman oil sand of the Burbank oil field, Oklahoma, is about 13 per cent.

Samples of the Bartlesville oil sand obtained from wells in northeastern Oklahoma indicate that the lower limit of pore space for production from this sand is about 12 per cent. Studies of the producing oil sand in the northwest extension of the Burkburnett oil field, Texas, and of the Wall Creek sandstone ("first Wall Creek sand") in the Salt Creek, Big Muddy, and Sost Soldier Fields, Wyoming, suggest that a definite lower limit also holds for these sands. None of the producing oil sands thus far studied has a porosity of less than 10.5 per cent in such samples as show a fairly uniform size of grain and an average diamenter of grains of 1-100 of an inch or less.

From the information gathered about oil sands in general, and from preliminary studies of the Bradford oil sand itself, it seems justifiable to assume that the lower limit for production from this sand is not less than 10 per cent. On this assumption, the productive part of the sand in the core from the well near Custer City has a total thickness of only 37 feet, although every foot of the core from 1,230 to 1,292 feet contained some oil.

Porosity and Yield of Oil

A relation apparently exists between the average porosity of an oil sand and the amount of oil that is recoverable by present methods. The initial production of oil from normal wells near Custer City, Pa., where the sand may be assumed to have an average porosity of 15 per cent, is said to be 10 to 50 barrels, and the average yield by flooding with water is estimated as not more than 4,000 barrels to the acre. A sample of the oil sand from the Bolivar district had a porosity of 21.3 per cent, and in the part of this field, near the well from which the sample was obtained the initial production is commonly from 200 to 300 barrels, and the yield of oil by flooding with water is said to be 10,000 to 12,000 barrels to the acre.

A similar relation of oil yield to sand porosity has been discovered in other fields. The curve showing relation between production and porosity in the Hickman sand in the Burbank oil field, Oklahoma, is based on much detailed information, and in the absence of equally precise information from other fields, the rates of flow due to porosity of sand

(Continued on Page 148)

METERS

For Measuring Production and Distribution of

Oil—Gasoline—Gas

and Other Fluids

Please note change of address

PITTSBURGH METER COMPANY

General Offices and Works:
7800 Susquehanna St., PITTSBURGH, Pa.

SALES OFFICES:

New York—50 Church St.
Chicago—5 South Wabash Ave.
Kansas City—Mutual Bldg.
Columbia, S. C.—1433 Main St.
Seattle—4038 Arcade Bldg.
Los Angeles—Union Bank Bldg.

SERVICE IN OIL SECURITIES

We are prepared to furnish information regarding Standard Oil and other oil stocks and to give most efficient service to orders in oil securities.

CARL H. PFORZHEIMER & CO.
(Specialists in Standard Oil and Miscellaneous Oil Securities)
25 Broad Street NEW YORK, N. Y.

The
Neco Pump
(Working Barrel)

At Garber, Okla., one of the leading producing companies reports a saving of 60 to 80% in pulling cost by using Neco Pumps.

Stocked throughout the Mid-Continent field by

Oil Well Supply Co.

Northrup Equipment Co.
Parkersburg, W. Va.

Manufacturers of
Working Barrels
Valves
Steel, Bronze and
Non-corrosive Balls
and Seats

Patented

MID-CONTINENT STATES MAKE GREAT SHOWING

(Continued from Page 138)

Fox	2,256	69,936
Brock	1,927	59,737
Tussy or Sholem Alechem.	1,881	58,311
Total	47,396	1,469,245
Stephens-Cotton Counties:		
Loco-Milroy	2,268	70,308
Comanche	711	22,041
Duncan	6,221	192,851
Walters	967	29,977
Kilgore	152	4,712
Total	10,319	319,889
Jefferson County:		
Hambro	576	17,856
Caddo County:		
Cement	1,570	48,670
Garvin County:		
Robberson	2,997	92,907
Beckham County:		
Sayre	104	3,224
Pontotoc County:		
Allen	268	8,308
Pottawatomie County:		
Maud	15	465
Total March	464,636	14,403,716
Total February	496,635	13,905,780
Difference	31,999	497,936

Note: County classification is not exact in some cases. Mounds district lies in three counties; Coweta in Waggoner County; part of Glenn Pool is in Tulsa County; part of Quay in Pawnee County; part of Stroud in Creek County; Milroy is in Carter County.

NORTH AND CENTRAL TEXAS
Average Daily and Monthly Production in March, 1925

North Texas—	Daily	Monthly
Burkburnett	15,104	468,224
Electra	17,318	536,858
Iowa Park-K. M. A.	4,184	129,704
Archer County (Holliday etc.)	41,607	1,289,817
Clay County	379	11,749
South Vernon	6,492	201,252
Montague County	73	2,263
Total	85,157	2,639,867
Central Texas—		
Clear Fork	6,351	196,881
Breckenridge	8,876	275,156
Caddo	4,577	141,887
Gunsight	64	1,984
Ranger-Eastland	6,940	215,140
Rising Star	109	3,379
Sipe Springs	209	6,479
Desdemona	2,689	83,359
Pioneer	1,002	31,062
Brown County	1,260	39,060
Callahan County	3,908	121,148
Cleman County	70	2,170
Jack County	21	651
Palo Pinto County	124	3,844
Shackelford County	2,566	79,546
Mitchell County	1,590	49,290
Reagan County	12,211	378,541
Total	52,567	1,629,577
Panhandle—		
Gray	62	1,922
Carson County	2,109	65,379
Hutchinson	245	7,595
Wheeler	65	2,015
Total	2,481	76,911
East Central Texas—		
Mexia	20,086	622,666
Powell	55,077	1,707,387
Currie	1,692	52,452
Richland	6,396	198,276
Wortham	73,706	2,284,886
Total	156,957	4,865,667
Total all fields, March	297,162	9,202,022
Total all fields, Feb.	295,950	8,286,600
Difference	1,212	915,422

GULF COAST FIELDS
Average Daily and Total Monthly Production for March, 1925

District—	Daily	Monthly
Batson	1,519	47,089
Blue Ridge	911	28,241
Barber Hill	101	3,131
Big Creek	539	16,709
Dayton	41	1,271
Damon Mound	1,210	37,510
Edgerly, La.	567	17,577
Goose Creek	8,766	271,746
Humble	4,821	149,451
Hull	22,619	701,189
Jennings, La.	1,011	31,341
Markham	102	3,162
Orange	10,417	322,927
Spindle Top	1,115	34,565
Saratoga	1,555	48,205
Sour Lake	4,100	127,100
South Liberty	10,400	322,400
West Columbia	12,425	385,175
Welsh-Anse-Le Bute, La.	86	2,666
Vinton, La.	5,720	177,320
Lockport, La.	404	12,524
Miscellaneous	200	6,200
Total for March	88,629	2,747,499
Total for February	77,278	2,163,780
Increase	11,351	583,719

SOUTHWEST TEXAS FIELDS
Average Daily and Total Monthly Production for March, 1925

District—	Daily	Monthly
Luling	29,300	908,300
Laredo	4,106	127,286
Somerset	2,587	80,197
Calliham	342	10,602
Roundale-Minerva	436	13,516
Jim Hogg County	6,112	189,472
Total for March	42,883	1,329,373
Total for February	44,760	1,253,280
Difference	3,123	76,093

NORTH LOUISIANA
Daily Average and Total Monthly Production for March, 1925

Field—	Daily	Monthly
Bellevue	4,056	125,736
Caddo, light	9,330	289,230
Caddo, heavy	2,189	67,859

Write for free cat.

ARMSTRONG BROS.
CHAIN PIPE VISE
DROP FORGED STEEL
The Ideal Portable Vise
RAPID, STRONG, COMPACT
One turn of handle releases or grips pipe.

ARMSTRONG BROS. TOOL CO.
330 No. Francisco Ave., Chicago, U.S.A.

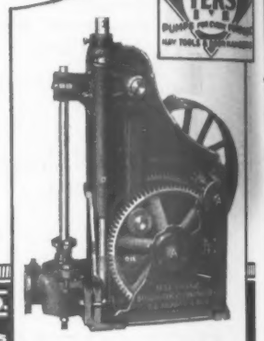
GURLEY

The Oil Man's Standard in
ENGINEERING INSTRUMENTS
— Since 1845 —
W. & L.E. GURLEY TROY, N.Y.

MYERS

SELF-OILING
A REGISTERED TRADE NAME
BULLDOZER POWER PUMPS

Maximum service — minimum expense are the powers that govern operation costs. Do you know that MYERS SELF-OILING BULLDOZER POWER PUMPS with their positive self-lubrication, enclosed working parts, improved method of power application, extra large valves and other exclusive features have created a new standard of water service, the like of which cannot be equaled by old types of power pumps. Capacities up to ten thousand gallons per hour, with styles for both shallow and deep service, MYERS SELF-OILING POWER PUMPS are cutting water costs in two for many operators. We'll be glad to send catalog and information.



SECTIONAL VIEW

THE F.E. MYERS & BRO. CO.
ASHLAND, OHIO.
ASHLAND PUMP AND HAY TOOL WORKS

Should Women Bob Their Hair?

NYE—the Die Man
Pipe tool maker to the American Plumber and Steamfitter

Someone wrote to the fashion editor and asked if short skirts make women look shorter. He replied, "we don't know what it does to the women, but it makes the men look longer."

I met a man the other day who believes all women should bob their hair. He had me just about convinced. And then I found out he was a barber.

As far as we are concerned, if women want to bob their hair that is their business, but if you want pipe threading or cutting tools—that is our business.

If a woman bobs her hair it makes her look younger. Nye dies don't make a man look younger. They do better than that—they make a man *feel* younger. And they make him live longer—and act better.

The Nye die with its skip tooth feature,—and the Nye knurled knife blade cutter wheels—work smoother and faster than any other similar tools.

Nye thin blade cutter wheel, made to fit all standard makes of pipe cutters, and guaranteed against breakage in use. Made both in smooth and knurled edge.

With the fine tool steel of which they are made they last longer than any other. And so does the man who uses them.
HARRY G. NYE.

THE NYE
TOOL & MACHINE WORKS
108-128 North Jefferson Street,
Chicago, Illinois

The tools you swear by and never at

BAKER CASING SHOE CO.
Box 264 F Huntington Park Sta.
LOS ANGELES, CALIF., and
Box 239 F COALINGA, CALIF.
MANUFACTURERS AND DEALERS
Oil Well Specialties for Advanced Methods Practical and Dependable
BAKER
Anchor Wall Packers
Baker Casing Shoes
Bridge Builders
Cement Retainers
Cement Plugs
Clean-Out Bailers
Dump Bailers
Die Nipples | Water
Die Collars | Tight
Gas Traps
Hinged Spiders
Heaving Plugs
Pitman Ends
Plain Casing Shoes
Regular Hook Wall Packers
Release Hook Wall Packers
Rotary Bits, Baker Type
Rotary Hole Guides
Rotary Shoes
Rotary Tool Joints
Rotary Wall Hooks
Split Shoe Guides
All Supply Houses or Direct
Mid-Continent Representatives
B & A Specialty Company,
404 West First Street,
Tulsa, Oklahoma

WESTERN BANK SUPPLY CO.
Manufacturing Stationers
High-Grade Office Furniture
Filing Cabinets—Safes
Log Books Township Plats All Standard Forms
Lithographing Embossing
Engraving Printing
"THE HOUSE OF QUALITY"
117 West Main St. 4th and Boston
OKLAHOMA CITY TULSA, OKLA.

Capital Abstract & Realty Co.
W. S. Bell L. B. Norton
J. F. Patterson
Okmulgee, Okla.

DAWSON TOWEL SUPPLY
Aprons, Towels, Jackets for Rent
Towel Service for Office $1.50 Mo.
Phone 9985 Tulsa, Okla.

Dickey-Ashby-Fountain Co.
General Insurance
Derricks, Tanks and Contents Insured
1114 Atlas Life Bldg., Tulsa, Okla.

GEO. W. HENRY, Printer
"Better Printing"
Phone 2-0238
510 S. Elgin Tulsa, Okla.

LAFE SPEER ABSTRACT CO.
General Abstractors
J. A. Boyd, Pres. and Mgr.
11 S. Park St. Sapulpa, Okla.

Place your order for Ice with the
TULSA ICE CO.
2-0812, 4 N. Detroit, Tulsa, Okla.

Cotton Valley	8,613	267,003
De Soto & Red River	4,272	132,432
Elm Grove	697	21,607
Haynesville	14,547	450,957
Homer	6,815	211,265
Total March	50,519	1,566,089
Total February	47,983	1,343,524
Difference	2,536	222,607

ARKANSAS
Daily Average and Total Monthly Production for March, 1925

Field—	Daily	Monthly
El Dorado	9,233	286,223
Nevada County	1,516	46,996
Smackover, light	32,072	994,232
Smackover, heavy	70,125	2,173,875
Stephens	2,037	63,147
Total March	114,983	3,564,473
Total February	103,082	2,886,296
Difference	11,901	678,177

Number of producing wells at close of March, 1925:

Smackover, heavy	1,433
Smackover, light	826
Haynesville	621

RUMANIA EXPLAINS LAW ON OIL CONCESSIONS

(Continued from Page 104)

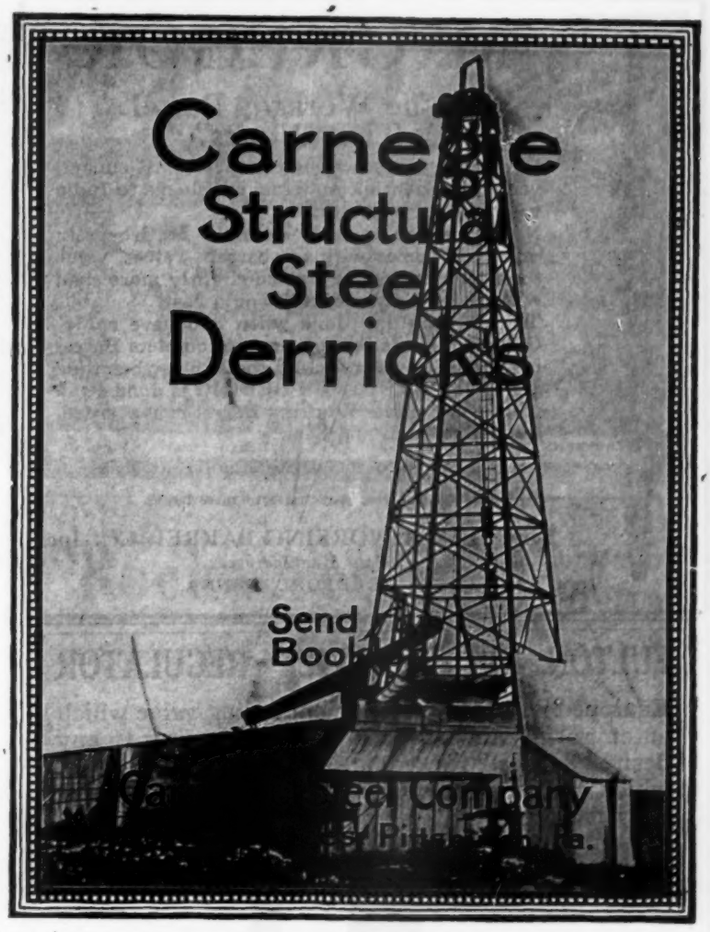
exploitation of sources of energy are closely connected with the safety of the country, and in view, lastly, of the efforts made by all States at the present time to imbue with their own policy the activities of the economic organizations belonging to their subjects it seems difficult to contest the legitimacy of the solution by the Rumanian State, which intends to put its property exclusively into a national company, in which without impeding the development of the enterprise, it will always have a sufficient control. It should not be forgotten that the Rumanian legislator, anxious to leave to private intitiative the effective direction of the venture, also leaves it the decision in the last instance, even if the majority of capital should belong to the State.

Serious reasons make us prefer the participation of foreign capital in the shape of cooperation with Rumanian savings and work, rather than a combination in which foreign capital would be alone at work. Working in a Rumanian firm, foreign capital would find in the cooperation of the energy and ecenomic resources of the country that assistance and that guarantee of stability which might be found wanting if it had to act alone.

These are some of the reasons which have led the Rumanian State to adopt for the exploitation of its mineral deposits a special type of limited company, promoted by the State and by Rumanian and foreign private capital; the majority is reserved to the Rumanian State and Rumanian capital and the rest is at the disposal of foreign capitalists if required.

However, it should be pointed out—in order to obviate mistaken interpretations and comments, which have occurred too often recently—that these provisions apply only to such companies as may in future exploit State properties. They concern in no way any companies which may be formed to exploit private properties, the latter remaining subject to ordinary law.

Thus, for instance, the mining law required companies to take the form described above only if they propose to acquire petroliferous lands belonging to the State. They will keep their present form if they do not desire to participate in the exploitation of deposits belonging to the State, and may, without any impediment, extend their activity to lands belonging to private individuals over which the rights of the State remain suspended for 50 years owing to the vested rights of present legal owners. This shows we may observe, what an immense field of activity still remains open to foreign companies working petroleum in Rumania—even if they retain their existing constitution—and how unjustified are the censures which for want of sufficient information have been directed against the mining law.



How About Next Week?

Are you certain that you will receive next week's issue?

Renew your subscription now and you will be absolutely sure of getting your Journal every week.

The Journal is the "trade mark" of the progressive men in the Industry. Keep it handy at all times. It will help you.

The Oil and Gas Journal

"America's Greatest Petroleum Publication"

McGregor Working Barrel

McGREGOR

"The Working Barrel That Works"

Over fifty thousand now in use from Pennsylvania to Argentine and from Oklahoma to India wherever oil is produced.

No Barrel can compete with the McGregor in price. It comes with the barrels, valves, valve stem all complete at a price slightly more than what the old style Barrel would cost.

The only pulling done when you have a McGregor in use is the rods as the complete Barrel is fastened to the rods and comes out when they are pulled. TUBING PULLING is done away with as far as the Working Barrel is concerned. Use "Mac" Ball and Seat.

See your dealer or write us for circular

← In ordering parts refer to these letters

McGREGOR WORKING BARREL CO., Inc.
Sole Manufacturers
BRADFORD, PENNA.

FULTON HOUSE-SERVICE REGULATOR

Equipped with a highly efficient spring valve which automatically reduces high intake pressures to any desired degree. Its strong feature is the valve seat which our catalogue fully explains. Send for your copy today.

CHAPLIN-FULTON MFG. CO.
28-36 Penn Ave., Pittsburgh, Pa.

35

PIONEER
TANK & BOILER Co.
TULSA-OKLA

Oil Refinery Tankage

CRUDE and STEAM STILLS
CONDENSER BOXES
AGITATORS, TOWERS
HEAT EXCHANGERS
SEPARATORS
STORAGE and PRESSURE TANKS
ETC.

Steel Warehouse Dept.

STEEL PLATES, SHEETS
ANGLES, BARS, BEAMS
CHANNELS, RIVETS
BOILER TUBES
FLOOR PLATES
TANK FLANGES
STAY BOLTS
SMITH COAL and COKE

Immediate Shipments from Tulsa Stock

PHONE O-1146 OR WRITE BOX 1926.

30,000 BBLS. OIL PER ACRE LEFT IN BRADFORD

(Continued from Page 145)

there may be applied provisionally in the Bradford Field. The production of wells with identical sand porosities would not be the same in the Burbank and Bradford Fields, but the proportion between the yields of sands of say 12 and 15 per cent porosity would probably be similar in the two fields. For example, in the Burbank Field a sand with a porosity of 17.3 per cent yields oil about 2½ times as rapidly as a sand with a porosity of 14 per cent, and the ratio between the rate of flow of two oil sands of the same porosities in the Bradford Field would probably be about the same.

It is indicated that little if any oil can be recovered by present methods from the parts of the sand that have a porosity of less than 10 per cent and that the 29 feet of sand between 1,240 and 1 269 feet in this well is the portion that is likely to yield nearly all the oil by flooding with water.

Although flooding the oil sand with water has ordinarily greatly increased the quantity of oil recoverable, it seems that even after flooding the greater part of the oil still remains underground. One of the cores taken in the Bolivar district in New York comes from a supposedly "watered out" territory. The average of three determinations of the oil and water in this core showed a ratio of 64 parts of oil to 36 parts of water. The 64 parts of oil represent slightly more than 10 per cent of the volume of the oil sand in the three samples tested. Assuming that this volume ratio of unrecovered oil to oil sand is generally applicable in the near-by Bradford Field, where the sand has been flooded, and that the pay sand is 37 feet thick, almost 30,000 barrels of oil per acre are left in the ground after flooding.

This estimate, based on the volume of oil in the core from the Bolivar district, agrees closely with an estimate obtained from determinations of porosity of the core from the well near Custer City. If we assume, on the basis of these determinations, an average porosity of 15 per cent, the original oil content of the 37 feet of Bradford sand, if completely saturated, would be nearly 45,000 barrels an acre. An average recovery of oil (by both ordinary methods and flooding) of 10,000 barrels to the acre is a fair estimate for the field, so that 35,000 barrels of oil per acre remains in the ground after flooding.

The higher estimate of unrecovered oil shown by the figures for porosity is to be expected, because complete saturation of the sand by oil was assumed, whereas some of the sand contained gas. Also the oil remaining in the sand probably constitutes a little more than 10 per cent of the volume of the rock, because some of the oil would have been washed off the surface of the core or would escaped by drainage and evaporation before the core was inclosed in an air-tight container. That is, two independent, estimates indicate that an average of 30,000 to 35,000 barrels of oil an acre (approximately three-fourths of the oil originally in the Bradford sand) is left in the sand by the methods of oil recovery now practiced.

This residual oil may possibly be of slightly different composition from that recovered by pumping or by "water drive," and it is recommended that analyses be made of the oil extracted from selected core samples in "watered out" territory in order that specific information on this subject may be obtained.

UNIVERSITY LEASE SALE

AUSTIN, Tex., May 2.—The first sale of oil and gas leases on university land on competitive bids under the new State law will be held June 16. Heretofore the university oil and gas leases were granted at 10 cents per acre and a royalty of one-eighth of the oil or gas. It has been estimated competitive bids would have brought the State more than $800,000 on leases let to date.

For AMBULANCE Service
PHONE 3-7111
MARTIN FLEMING UNDERTAKING CO.
Prompt and Efficient Service
110 W. Ninth Tulsa, Okla.

Northern Oil Information Bureau
Shelby, Montana
Complete weekly drilling and operating report of Kevin-Sunburst field mailed to any address, $10 for four reports. Maps and logs for sale. Best of references. We maintain geological, land and field deparments, all in expert hands.

NEW OLNEY DISTRICT MAP
JUST OUT
Covers an area in Archer, Young, Throckmorton and Baylor Counties, Texas, approximately 21 miles east and west and 13½ miles north and south and includes the Swastika, Harmel, Ragle, Carey and Peters pools. Scale, 2000 feet 1 inch. On cloth, $7.50; paper, $4.50.
Write for catalog of other maps.
HEYDRICK MAPPING CO.
Wichita Falls, Texas

Clive M. Alexander
CONSULTING ENGINEER
Petroleum Refineries and Natural Gasoline Plants
502 Cosden Bldg.
TULSA, OKLA.

M. M. GARRETT
CONSULTING GEOLOGIST
602 City Nat'l Bank Bldg.
Wichita Falls, Texas

F. B. Porter, B. S., Ch. E., President
R. H. Fash, B. S., Vice President
THE FORT WORTH LABORATORIES
Field gas testing. Analyses of oil field brines, gas, minerals and oil
828½ Monroe St., Fort Worth, Texas

WRITE FOR OUR FREE BOOK ON
PATENTS
MUNN & CO.
New York
361 Woolworth Building
514 Scientific American Bldg., Washington, D. C.
Chicago, Ill.
403 Tower Building
San Francisco, Cal.
356 Hobart Building

PATENTS OBTAINED FOR INVENTORS
JACK A. SCHLEY
U.S. PATENT ATTORNEY
305 INTERURBAN BLDG., DALLAS

W. G. MATTESON
CONSULTING GEOLOGIST
Specialist examinations and appraisals Mid-Continent and Gulf Coast Oil Properties
314 Texas State Bank Bldg., Fort Worth, Texas
Box 471, G. P. O., New York City

F. JULIUS FOHS
OIL GEOLOGIST
1230 Kirby Bldg., Dallas, Tex.
818 Kennedy Bldg., Tulsa, Okla.
and 60 Broadway, New York
Cables: Fohsoil
Codes: Bentley & McNeil
No professional work undertaken

William H. Foster W. A. Reiter
FOSTER & REITER
CONSULTING GEOLOGISTS
19th Floor, Magnolia Bldg., Dallas
Atlas Life Bldg., Tulsa

WALTER STALDER
OIL GEOLOGIST
Crocker Bldg.,
SAN FRANCISCO, CALIF.

FRANK C. GREENE
CONSULTING GEOLOGIST
Exchange Natl. Bank Bldg.,
Tulsa, Okla.
Office Phone 2-4589
Residence Phone 8516

V. H. McNUTT
CONSULTING GEOLOGIST AND APPRAISER
Specializing in Northern Oklahoma and Southern Kansas Fields
TULSA, OKLA.
Rooms 404-405 Commercial Bldg.

C. W. WASHBURNE
GEOLOGIST
1 Rector Street New York

E. J. LONGYEAR CO.
MINING ENGINEERS AND GEOLOGISTS
Diamond Core Drill Manufacturers
Diamond Drilling Contractors
MINNEAPOLIS, MINN.

EDWIN B. HOPKINS
CONSULTING GEOLOGIST
25 Broadway
NEW YORK

W. L. GOMORY
CHEMICAL ENGINEER
Consulting Petroleum Technologist
INVENTOR GOMORY CRACKING PROCESS
Licenses Solicited
Refinery Design
Peoples Gas Building Chicago

JOHN B. KERR
PETROLEUM GEOLOGIST
Phone Garfield 4734
601 BALBOA BLDG.
SAN FRANCISCO, CALIF.

HARRY F. WRIGHT
GEOLOGIST
Geological Examinations
Valuations for Tax and Financing
200 So. Cheyenne TULSA

English Syndicate Offers to Take Over Chester Concession

NEW YORK, May 2.—The dissension in the Ottoman-American Development Co., which began with the developments leading up to the retirement from the company of Rear Admiral Colby M. Chester, its sponsor, and other prominent Americans, ended when, at the annual meeting, the directors approved an offer of an English syndicate to take over the Turkish concessions for which the company was formed. Henry Woodhouse, spokesman for the company for the last two years or more, was dropped from the board.

A statement issued after the meeting says:

"At the annual meeting of the Ottoman-American Development Co., owner of the so-called Chester concessions, held at the office of the company, room 817, 258 Broadway, New York City, the following board of directors was elected:

"C. A. Barnard, Colonel K. E. Clayton-Kennedy, Major J. E. Hausman, Willian Whittam, A. H. Gleason, M. R. Stewart and John J. Hayden. William Whittam was reelected president, M. R. Stewart was elected treasurer and John J. Hayden, secretary.

"The directors considered and approved the offer of an English syndicate to take over the concessions and authorized a special meeting of stockholders for the purpose of approving the proposed transfer.

"Henry Woodhouse was dropped from the board, owing to the fact that he had not made any tangible progress with the affairs of the company."

Of those forming the new board of directors, Messrs. Clayton-Kennedy, Barnard and President Whittam were among the 11 or 12 men who planned and obtained the Turkish concessions, led by Admiral Chester and Colonel Kennedy.

Differences of Opinion

Differences of opinion as to the methods of financing the Ottoman-American Development Co., which charged itself with the task of developing the concessions in Turkey, have been responsible for the long series of disagreements. The trouble came to a head in November, 1923, with the resignation of several principals, including Frederick S. Blackall, who ordered the company to vacate its office, which was maintained in his own suite in the Woolworth Building. F. B. Potter, a member of the New York Stock Exchange, also resigned. Others who severed their connection with the company included General George W. Goethals, H. C. Sheridan of Washington and A. S. Roberts, an associate of Mr. Sheridan.

Mr. Potter in a statement at the time said it had been proposed to sell stock of the company held in its treasury for capital purposes, but that he felt the concession was in no shape then to justify the sale of stock to the public. A similar reason was given for the resignation of Mr. Blackall.

Horace G. Knowles, former United States Minister to Serbia, Bulgaria, Bolivia, Nicaragua and the Dominican Republic, who was appointed general counsel a month before the resignations said documents in his possession showed that a group of British financiers had offered to underwrite the company's securities to the extent of £10,000,000 and that several groups of French and Italian bankers had also offered to participate in the financing.

The Chester concession never received the specific approval of the United States Government, although repeated efforts were made. Exact knowledge as to the extent of the participation by American capital in the project has been lacking.

"BERITE"
U.S. TRADE MARK 160836
It Puts More Oil in the Tank

Mr. Oil Producer, do you want to get rid of your paraffin trouble and increase your production? If so try "BERITE" a non-explosive and non-inflammable chemical that removes paraffin asphaltum, etc., from oil and gas wells.

Write for particulars.

BERWALD CHEMICAL CO.
BRADFORD, PA.
SOLD BY LEADING SUPPLY STORES

"Rockacres" A Rustic Colorado Mountain Home
FOR SALE

An ideal two-story rustic bungalow cottage standing on sixteen rugged and scenic acres adjoining the exclusive Stanley Hotel in Estes Park. "Rockacres" was built, furnished and lived in by people who appreciate a real home. The house has four spacious bdrooms, bath and sleeping porch on the ground floor; mammoth 19 x 39 foot living room with rustic fireplace; bedroom with large glassed in porch, bath and modern kitchen on main floor which is practically surrounded with wide verana from which an inspiring panorama of Longs Peak and the snow capped range inspires the soul. Running water, electric lights, hot water heat, telephone and every other modern convenience and completely furnished. Ready for occupancy. For sale at a bargain price. Sufficient ground to sell enough mountain home sites to recover major part of investment. Information and photos furnished interested parties. Address Harriet L. Raines, Brown Palace Hotel, Denver, Colo.

ROSS-MEEHAN FOUNDRIES
Manufacturers
Electric Steel Castings, Certified Malleable
Iron Castings, and Gray Iron Castings
For
Oil Producers and Refineries
"Meehanite Metal" Castings
River Clamps a Specialty
CHATTANOOGA, TENNESSEE, U. S. A.

LUFKIN
TAPES and RULES
STANDARD OF
Accuracy & Service
Favorably Known to the Oil Industry for Years
On Sale Everywhere Send for Catalog
THE LUFKIN RULE CO. SAGINAW, MICH.
New York Windsor, Can.

JOHN L. RICH
PETROLEUM GEOLOGIST
OTTAWA, KANSAS

L. G. Huntley Stirling Huntley
HUNTLEY & HUNTLEY
PETROLEUM GEOLOGISTS AND ENGINEERS
Frick Building PITTSBURGH, PA.

FREDERICK G. CLAPP
Consulting Geologist and Petroleum Engineer
30 Church St., New York City

JOSEPH L. ADLER
CONSULTING GEOLOGIST
DENVER, COLO.
1115 First National Bank Bldg.

Robert H. Wood Virgil O. Wood
WOOD & WOOD
GEOLOGISTS AND PETROLEUM ENGINEERS
Phone 2-1725
302 Commercial Bldg.
TULSA, OKLA.

CARL B. ANDERSON
GEOLOGIST AND PETROLEUM ENGINEER
804 Kennedy Bldg.
TULSA, OKLA.

CHARLES T. KIRK
CONSULTING GEOLOGIST
American and Foreign Fields
Phones 2-2821—2-9504
Suite 523 Mayo Bldg.
TULSA, OKLA.

Appraisals Investigations
SAMUEL J. CAUDILL
PETROLEUM ENGINEERS
TAX COUNSELLORS
Tulsa 1014 Atlas Bldg. Los Angeles 433 Security Bldg.

Wilbur E. Brown G. Thomsen, Jr.
BROWN & THOMSEN
GEOLOGISTS
419 West Grand Ave.
OKLAHOMA CITY, OKLA.

H. H. MESSIMER
Tang Gauging Engineer
MACHINE MADE TANK TABLES
ABSOLUTE ACCURACY
P. O. Box 257 104 Mid-Co Bldg.
Phone 2-4909—Tulsa, Okla.

ROBERT W. CLARK
CONSULTING GEOLOGIST AND APPRAISER
Depletion and Reserves for Income Tax
217 Commerce Bldg.
OKMULGEE, OKLA.

CENTRAL OHIO

(Continued from Page 52)

The location is probably 60 to 70 miles almost due north from Huntington.

In Turman Township, Sullivan County, J. F. Bolinger and others are drilling No. 3 W. W. Harris, Section 2.

In Barton Township, Gibson County, the Consolidated Oil Co. and Nelson are drilling a test on the Lucy Taylor English farm, Section 8, and in Union Township, same county, J. H. Young and others are working on a wildcat on the Teiman Brothers farm, Section 1. In Monroe Township, Pike County, the Ohio Oil Co. is starting No. 2 Della Wilson farm, Section 16.

Illinois

Four completions are reported from Illinois fields during the week, with one dry hole and 120 bbls. flush. and seven old wells were abandoned. Several new wells have started drilling, mostly in the shallow field of Clark County, where a new deeper sand, known as the Stray sand, has been showing some excellent producers. In Martinsville township, Clark County, the Trenton Rock Oil & Gas Co.'s No. 8 well, 200 feet from the south line and 1,120 feet from the east line of the E. R. Ault farm, in the northeast quarter of Section 30, produced 40 bbls. from the Stray sand at 1,431 feet. Same company is drilling No. 11 James S. Carper, same section. The Ohio Oil Co. is drilling No. 4 A. W. Cavolt, Section 31. Ferriman and others are drilling No. 2 N. D. Slater farm, and No. 2 Thomas Ramsey farm, Section 31.

In Casey Township, Clark County, H. A. Worts and others are drilling No. 1 on the G. W. Harrold farm, Section 13. In Parker Township, Bullock and others are drilling an advance well on the N. P. Daugherty, Section 10. Lusk, Stratton and others are drilling a test on the J. W. Bartin, Section 15; Shrider, Coats and others are drilling No. 3 Hattie Briscoe, Section 29, and No. 1 on the Nat Lee farm, same section.

In Martin Township, Crawford County, the Ohio Oil Co. abandoned No. 11 on the Susan Tohill No. 1 farm, Section 22. In Honey Creek Township, John Phipps is drilling No. 7 D. A. Funk, Section 36, and McNeal and others are drilling No. 5 C. S. Jones, Section 7. In Licking Township, the Peoples Bank & Trust Co. has a rig in for a second test on the Silas Wilkins farm, Section 4.

In Dennison Township, Lawrence County, the Citizens Oil Co. abandoned No. 1 S. J. Gee No. 2 farm, Section 21; No. 1 J. H. Jordan, Section 20, and No. 5 J. M. Gee, same section. The Ohio Oil Co. abandoned Nos. 41 and 42 L. A. Buchannan, Section 2, and No. 3 Sarah E. Grayson, Section 20. Same company is drilling No. 12 J. W. Clark No. 2 farm, Section 3, same township.

In Wabash Township, Wabash County, in the Allendale Field, Wirebaugh & Ballard's test 200 feet from the south line and 400 feet from the west line of the William Shaffer farm, in the northeast quarter of Section 15, pumped 10 bbls. from a depth of 1,476 feet. Gray and others drilled a dry hole in No. 1 on the southwest corner of the R. and E. Higgins, in the northeast quarter of Section 23 at 1,525 feet. Wirebaugh & Ballard's second test, 625 feet from the north line and 200 feet from the east line of the H. A. Price, in the southeast quarter of Section 23, produced 70 bbls. at 1,470 feet. Hartman, Parrott and Young are drilling No. 1 Lucretia Miller farm, Section 23, and William Sargent has a rig up for No. 3 Holson-Dorney farm, Section 18. North of Mt. Carmel, Andrews and Smith have started their wildcat on the John Geiger farm, Section 8, Mt. Carmel Township.

H. McCurdy and others, drilling a series of ten wildcat wells in the Coles County area, are now drilling No. 1 on the J. M. Oliver farm, Section 17, Ashmore Township of that county. Their initial test on the J. J. Courtney, Section 4, same township, proved a duster.

STEEL
for Immediate Shipment from Stock
Bars, Plates, Rivets, Tool Steel, Shapes, Sheets, Bolts, Welding Rods, Structurals, Tubes, Wire, Concrete Reinforcing, Rails, Pipe, Turnbuckles, Small Tools, Machine Tools, etc.
Write for Ryerson Journal and Stock List
JOSEPH T. RYERSON & SON INC.
CHICAGO ST. LOUIS CINCINNATI
TULSA OFFICE—418 ATLAS LIFE BLDG.
HOUSTON OFFICE—220 MAIN ST.
DETROIT BUFFALO NEW YORK

ELECTRIC STEEL CASTINGS
Sterling Quality Castings
Meet All Oil Industry Requirements
"FOR STERLING WEAR USE STERLING CASTINGS"
Sterling Steel Co.
East St. Louis, Ill.
Tulsa Office: 308 S. Olympia St.
Dallas Office: 815 S. Ervay St.

GOULDS
FOR ALL PIPE LINE AND REFINERY SERVICES
BULLETINS ON REQUEST
THE GOULDS MANUFACTURING COMPANY
Seneca Falls, N. Y.
Branches or Agencies in All Principal Cities
PUMPS

DON'T BUY A PIG IN A POKE
When buying rod elevators
Specify FOGGAN SAFETIES, the elevator that is rightly designed and constructed for safely handling long and heavy strings of rods.
The FOGGAN rod elevator is equipped with automatic locking device which eliminates dropping rods and affording greatest protection to employes.
Your men will pull more strings of rods in a day, do it easier and safer with FOGGAN ELEVATORS.
FOGGAN elevators are made of DROP FORGED STEEL throughout and will stand ultimate pulling strain of nearly 30,000 pounds.
Why buy elevators of unknown construction?
See your dealer or write direct for prices.
Manufactured by Geo. N. Foggan, Pleasantville, Penna.

BROKAW, DIXON, GARNER & McKEE
GEOLOGISTS
PETROLEUM ENGINEERS
Examinations, Appraisals
Estimates of Oil Reserves
120 Broadway New York

Amil A. Anderson P. W. Anderson
ANDERSON & ANDERSON
Mining Engineers and Petroleum Geologists
804 Bitting Building
Wichita, Kansas
Telephone Market 2887

ROBERT W. HUNT CO.
Inspecting and Testing Engineers
Inspection of Oil Line Pipe, Oil Well Casing, Tanks, Drums and Barrels
Inspection During Manufacture
Resident Inspectors at Pipe and Steel Mills
2200 Insurance Exch., Chicago

H. H. HOOD
PETROLEUM ENGINEER
AND GEOLOGIST
Explorations, Surveys, Appraisals, Audits, Consultations, Management
1210 Chemical Bldg., St. Louis, Mo.
1839 McCormick Bldg., Chicago

IRVINE E. STEWART
GEOLOGIST
Great Falls, Montana
421 Ford Building
Denver, Colorado
926 Patterson Building

HEATH M. ROBINSON
GEOLOGIST
804 American Exchange Bank Bldg.
DALLAS, TEXAS
Telephone X2738

GEO. C. MATSON
GEOLOGIST
2-2049—Phones—2-1833
403 Coeden Bldg. Tulsa, Okla.

Frank A. Herald John M. Herald
HERALD BROTHERS
GEOLOGISTS
PETROLEUM ENGINEERS
303 Coeden Bldg. Phone 3-8711
TULSA, OKLAHOMA

JAMES O. LEWIS
PETROLEUM ENGINEER AND GEOLOGIST
734 Kennedy Bldg. Tulsa, Okla.

DEWITT T. RING
PETROLEUM GEOLOGIST
Armstrong Bldg.
El Dorado, Ark.

H. B. GOODRICH
PETROLEUM GEOLOGIST-ENGINEER
Phone 2-9268—2-8[illegible]
[illegible] Kennedy Building Tulsa, Okla.

NEW PNEUMATIC DRILL IN WOOD BORING WORK

A new size lightweight reversible pneumatic wood boring machine has been brought out by the Ingersoll-Rand Co., No. 11 Broadway, New York. This new drill is known as size DD and is suitable for wood boring up to 1-inch diameter holes.

The construction of this machine is very similar to that of the other three cylinder drills which this company manufactures. This new size DD drill was developed for wood boring work.

The features of this type of machine are briefly; special three-cylinder motor; light-weight aluminum case, with steel bushings cast in place in all the bearing holes and the throttle hole; renewable crank pin sleeve, and cast iron cylinders which are renewable and interchangeable. The renewable cylinders are a valuable feature, as any cylinder after long service, may easily be replaced and the motor made as good as new.

The three cylinder motor is described as having the rotating parts all accurately balanced, eliminating vibration and reducing wear and tear on the machine. Where only direct current is used, the in-air consumption and cost of maintenance, is high powered, and every part is readily accesible for inspection.

READ THE
Classified Wants
Pages 118-119-120
DO IT NOW
YOU MAY MISS A BARGAIN

S. F. GOGGINS NAMED SALES REPRESENTATIVE

The Dunn Manufacturing Co., of Oxnard, Calif., manufacturers of Dunn Safety Oil Well Tools, announces the appointment of S. F. Goggins as their sales representative in the California fields. Mr. Goggins' connection with the Dunn Manufacturing Co. began March 1.

He is a graduate of Carnegie Institute of Technology and served during the World War with the engineering corps overseas. Mr. Goggins' past business connections have been, engineer for the Westinghouse Machine Co., plant engineer for the Lucey Manufacturing Co., at Houston, Tex., and western representative for the American Well & Prospecting Co. He has also been affiliated with the California Engineering Co., of Los Angeles.

Mr. Goggins will cover the oil fields of both Southern and Northern California. for the Dunn Co.

NEW SALES OFFICES FOR AIR PRODUCTS CO.

The Linde Air Products Co., New York, manufacturer and distributor of oxygen for welding and cutting, has recently opened the following new district sales offices: 716 First National Soo Line Bldg., Minneapolis, Minn., C. E. Donegan, district sales manager; 409 Lincoln Life Bldg., Birmingham, Ala., W. A. K. Kopp, district sales manager; 508 Exchange National Bank Bldg., Tulsa, Okla., G. D. Grubb, district sales manager.

Local oxygen sales activity and the extension of Linde process service for Linde oxygen customers, as well as the sale of Prest-O-Lite dissolved acetylene, will be handled by these offices for their respective territories.

The Linde company also announces the appointment of J. W. Foster as district sales manager at Baltimore. Prior to this appointment, Mr. Foster was a senior salesman in the Pittsburgh Linde district.

The *Superior* Tongs
In oil and gas field service for thirty years.
Literature?
J. H. WILLIAMS & CO.
"The Wrench People"
New York BUFFALO Chicago
WILLIAMS
"VULCAN"
CHAIN PIPE WRENCH

Ventilators
Southern Cornice Works
Oil Field Work a Specialty

Phone 2-1546 118-120 So. Cincinnati
TULSA, OKLA.

STEEL CASTINGS
FOR THE OIL INDUSTRY
SERVICE QUALITY
Send us your blueprints
We meet your requirements
GEO. H. SMITH STEEL CASTING CO.
500 CLINTON ST. MILWAUKEE, WIS.
CHICAGO OFFICE—549 W. WASHINGTON BLVD.

Piping systems complete in every detail —design, construction, erection—for oil refineries and for plants employing special chemical processes. Write!
POWER PIPING CO., Pittsburgh, Pa.
Power Piping
FOR EVERY INDUSTRIAL NEED

Essential Where Oil is Used As Fuel
For maintaining a fixed discharge pressure in oil lines, the Fisher Oil Pump Governor Type 56 offers advantages never presented before. Write for Bulletin 602.
THE FISHER GOVERNOR CO.
366 Fisher Ave. Marshalltown, Iowa

STEEL PLATE CONSTRUCTION
Steel oil storage tanks, Condensers, Stills, Refinery equipment of every kind, Fabricated and Erected
RITER-CONLEY COMPANY
General Offices—Pittsburgh, Penna.

Oklahoma-Kansas and Eastern Pipe Line Report

GROSS PRODUCTION IN THE UNITED STATES FOR 12 MONTHS

OKLAHOMA-KANSAS PIPE LINE STATEMENT FOR FEBRUARY

Runs

Company—	Month	Daily Average
Prairie P. L. Co.	3,108.000	111.000
Gulf P. L. Co.	1,085.624	38.772
Texas P. L. Co.	342.603	12.236
Magnolia Pet. Co.	907.015	32.393
Cosden P. L. Co.	802.229	28.651
Empire P. L. Co.	1,000.485	35.732
*Sinclair P. L. Co.	1.148.000	41.000
*Other lines	7.700.000	275.000
Total Feb.	16,093,956	574,784
Total Jan.	17,839,078	575,454
Difference	1,745,022	670

Shipments

†Prairie P. L. Co.	4,322,556	154.377
Gulf P. L. Co.	1,150.280	41.081
Texas P. L. Co.	680.924	24.319
Magnolia Pet. Co.	1,276.146	45.577
Cosden P. L. Co.	876.652	31.309
Empire Pipe Line Co.	909,619	32,486
†Sinclair P. L. Co.	2,248.987	80.321
*Other lines	7.840.000	280.000
Total Feb.	19,305,164	689.470
Total Jan.	20,946,691	675,699
Difference	1,640,547	13,771

Stocks

*Prairie Oil & Gas Co.	25,400,000
*Prairie Pipe Line Co.	2,000,000
Gulf Pipe Line and Gypsy Oil Co.	9,942,053
The Texas Co. and Texas P. L. Co.	4,706,419
Magnolia Petroleum Co.	8,702,580
Cosden Pipe Line Co.	2,360,698
Empire Pipe Line Co.	3,074,864
*Sinclair Crude Oil Purchasing Co.	27,400,000
Carter Oil Co.	16,951,857
*Other lines	10,000,000
Total February	110,538,471
Total January	112,728,264
Difference	2,189,793

*Estimated. †Prairie shipments include Texas crude oil and Sinclair shipments include Texas and Wyoming crude oil.

Note—Stocks do not include approximately 9,000,000 bbls. held in storage on private tank farms and leases.

Runs From Wells

In the following table will be found the regular receipts from wells by various pipe lines in New York, Pennsylvania, West Virginia, Ohio, Kentucky and Indiana for February and March:

	Feb., '25	Mar., '25
Nat. Transit	152,089.01	169,772.00
S. W. Pa. P. Lines	75,044.66	83,742.71
Eureka P. L.	323,694.15	346,441.88
Buckeye P. L. (Macksburg)	257,192.02	285,108.00
Buckeye P. L. (Cleveland)	11,467.59	13,403.55
Buckeye P. L. (Lima, etc.)	121,216.85	132,914.79
Indiana P. L.	10,117.61	12,600.80
Cumberland P. L.	290,358.12	316,783.86
N. Y. Transit	18,156.30	20,196.49
Tidewater P. L.	123,151.77	142,538.93
Pure Oil	169,180.29	191,874.62
Emery P. L.	41,770.44	47,408.71
Indian Ref.	67,797.15	77,750.43
Paragon Dev.	29,532.74	17,370.31
Pittsburgh P. L.	7,359.37	8,470.60
Riggs Ref.	8,851.29	11,570.08
Total	1,696,963.36	1,877,817.76
Daily average	60,605.83	60,574.77

Note—Indian Refining Co. also reported other receipts of 307,768.21 bbls. Paragon Refining Co. had other receipts of 185,369.51 bbls. Paragon Development Co. had other receipts of 3,315.80 bbls. Pittsburgh Pipe Line had other receipts of 2,739.07 bbls.

Petroleum Deliveries

The following tables exhibit the shipments or regular deliveries of various pipe lines in New York, Pennsylvania, West Virginia, Ohio, Kentucky and Indiana for February and March:

	Feb., '25	Mar., '25
Nat. Transit	426,389.57	630,179.68
S. W. Pa. P. L.	333,592.35	373,161.19
Eureka P. L.	120,288.49	140,554.54
Buckeye P. L. (Macksburg)	95,657.49	94,087.14
Buckeye P. L. (Cleveland)	1,212.97	1,406.54
Buckeye P. L. (Lima, etc.)	754,903.48	791,406.18
Indiana P. L.	1,068,935.14	1,005,156.39
Cumberland P. L.	142,109.90	192,372.05
Crescent P. L.		5,257.28
N. Y. Transit	700,076.33	551,009.09
Northern P. L.	118,864.01	136,435.26
Tidewater P. L.	99,605.73	161,370.53
Pure Oil	124,856.43	196,445.91
Emery P. L.	38,829.91	44,477.67
Paragon Ref.	99,542.91	68,165.00
Indian Ref.	334,417.14	366,073.95
Paragon Dev.	37,650.36	20,019.17
Pittsburgh P. L.	7,261.61	12,151.49
Total	4,504,173.81	4,792,329.06
Daily average	160,863.35	154,591.26

Gross Stocks

The gross stocks held by various pipe lines in the oil producing section of New York, Pennsylvania, West Virginia, Ohio, Indiana and Kentucky at the close of February and March were as follows:

	Feb., '25	Mar., '25
Nat. Transit	1,035,423.87	1,068,609.40
S. W. Pa. P. Lines	686,629.94	746,167.41
Eureka P. L.	1,640,003.77	1,479,626.62
Buckeye P. L. (Macksburg)	269,748.41	243,240.44
Buckeye P. L. (Cleveland)	43,206.35	30,203.54
Buckeye P. L. (Lima, etc.)	3,491,690.20	3,358,207.59
Indiana P. L.	627,221.38	618,007.02
Cumberland P. L.	607,314.58	571,809.44
Southern P. L.	431,908.22	432,379.30
Crescent P. L.	58,244.28	49,923.81
N. Y. Transit	684,490.18	808,123.81
Northern P. L.	1,022,829.06	1,021,796.61
Pure Oil	454,163.71	446,021.83
Emery P. L.	11,400.75	14,313.36
Paragon Ref.	34,625.73	151,287.77
Indian Ref.	76,538.11	97,438.34
Paragon Dev.	8,591.88	9,158.55
Pittsburgh P. L.	5,210.04	4,602.85
Riggs Ref.	3,683.39	7,378.90
Total	11,192,923.90	11,158,296.59
Decrease	160,351.76	34,627.31

Grades of Oil

The following table shows the amount of the different grades of oil held by the eastern pipe lines at the close of February and March showing the gross stocks of the above fields:

	Feb., '25	Mar., '25
Pennsylvania	3,888,928.59	3,789,999.21
Lima	1,268,514.45	1,307,447.59
Kentucky	1,442,094.26	1,387,170.92
Mid-Continent	4,563,756.51	4,621,707.74
Illinois	29,596.89	51,971.13
Total	11,192,923.90	11,158,296.59

Daily Average Runs

The following table shows the daily average runs of the Pennsylvania, Lima and Kentucky oil fields for the past four years:

	1922	1923	1924	1925
January	67,702	75,790	62,638	56,831
February	75,096	71,092	63,023	60,606
March	78,531	76,592	68,721	60,575
April	75,462	75,614	71,058	.....
May	77,592	77,365	63,942	.....
June	76,193	77,593	63,230	.....
July	76,435	71,879	64,208	.....
August	79,337	76,910	59,942	.....
September	78,512	72,358	62,930	.....
October	77,209	76,256	64,976	.....
November	75,313	70,762	56,282	.....
December	73,351	69,271	55,814	.....

Daily Average Shipments

The following table gives daily average shipments from the Pennsylvania, Lima and other fields for the past four years:

	1922	1923	1924	1925
January	119,792	171,067	145,518	157,889
February	111,362	164,219	148,732	160,862
March	127,753	185,487	147,098	154,591
April	127,068	170,751	147,611	.....
May	127,840	177,102	134,997	.....
June	137,638	173,598	143,010	.....
July	137,872	168,330	124,187	.....
August	153,275	142,766	123,120	.....
September	158,761	137,266	127,325	.....
October	165,345	134,597	123,170	.....
November	165,677	131,426	124,460	.....
December	172,861	139,909	151,392	.....

Gross Stocks

In the following table will be found the gross stocks of the various lines of the Pennsylvania, Lima and Kentucky oil fields including oil received from other lines, at the close of each month for the past three years:

	1923	1924	1925
January	14,040,567	12,907,202	11,564,2
February	14,028,437	11,844,068	11,192,9
March	13,873,146	10,906,763	11,158,2
April	13,737,575	10,932,742	.....
May	13,815,622	11,335,589	.....
June	14,541,253	11,544,204	.....
July	14,645,584	12,062,361	.....
August	14,770,539	12,221,676	.....
September	14,803,444	12,206,836	.....
October	14,504,111	12,664,061	.....
November	14,157,728	12,268,530	.....
December	13,444,361	11,582,680	.....

Franklin Pipe Line Co.

The following table exhibits the condition of the Franklin Pipe Line at the close of business for the months named and as counted in the stocks and averages reported above:

1924—	Receipts	Shipm'ts	Stocks
March	3,398.74	1,716.28	11,756,0
April	3,311.84	2,066.78	13,001,0
May	3,036.50	6,338.21	10,099,2
June	3,188.31	497.01	13,011,0
July	3,067.74	3,394.29	12,674,4
August	901.36	6.21	13,569,5
September	2,794.58	5,775.89	11,178,2
October	3,342.40	1,880.50	14,594,1
November	2,700.13	482.89	13,477,3
December	3,120.34	2,659.13	13,888,5
1925—			
January	1,730.86	1,681.15	13,938,2
February	2,762.05	4,564.70	11,671,3
March	3,177.21	2,364.39	11,484,1

The Illinois Field

The following table gives the report of the Illinois Pipe Line Co. in Illinois:

Gross stocks, April 1	2,638,210,7
Runs from wells	735,410,7
Other receipts	323,641,0
Regular deliveries	653,996,0
Other deliveries	753,223,1

The amount of Illinois oil run by the Tidewater Pipe Line Co. in March was 21,635.95 bbls. and deliveries were 77,357.71. Adding these figures to those of the Illinois Pipe Line Co. makes the runs and deliveries from the Illinois Field as follows:

1924—	Runs	Deliveries
March	611,289.36	569,541,0
April	514,366.42	338,940,1
May	751,080.44	516,414,0
June	725,060.87	528,403,1
July	759,646.84	553,308,0
August	720,457.72	519,335,7
September	714,875.36	555,763,0
October	741,767.42	544,883,7
November	691,147.63	521,408,2
December	640,919.23	592,943,5
1925—		
January	695,513.43	573,394,7
February	636,635.29	514,661,4
March	764,336.65	611,548,0

The Tidewater Pipe Co., Ltd., also delivered in March 289,226.38 bbls. of Oklahoma oil. The total deliveries of all grades by the Tidewater were 527,954.62 bbls.

AVERAGE WEEKLY RECEIPTS OF CALIFORNIA OIL AT ATLANTIC AND GULF PORTS

Average bbls. per week—	ATLANTIC PORTS Baltimore	Boston	New York	Philadelphia	Others	Total	GULF COAST PORTS Galveston	New Orleans Baton Rouge	Port Arthur Sabine Pass	Tampa	Total	Total All Ports
December	57,127	16,709	386,596	81,067	18,291	561,540	.....	21,000	.....	.....	21,000	582,540
January	86,933	16,030	310,933	75,418	58,709	548,023	.....	.....	.....	.....	.....	548,023
February	45,248	18,746	247,751	43,750	20,250	375,745	.....	41,503	.....	.....	41,503	417,248
March	24,826	32,418	397,388	111,885	146,552	613,069	.....	52,612	.....	.....	52,612	665,681

AVERAGE WEEKLY IMPORTS OF PETROLEUM AT PRINCIPAL UNITED STATES PORTS

Average bbls. per week—	ATLANTIC PORTS Baltimore	Boston	New York	Philadelphia	Others	Total	GULF COAST PORTS Galveston	New Orleans Baton Rouge	Port Arthur Sabine Pass	Tampa	Total	Total All Ports
December	165,515	25,515	269,164	82,418	246,583	659,194	220,388	358,806	76,321	51,499	707,014	1,366,208
January	129,843	113,583	440,776	60,739	191,709	936,649	305,051	398,097	100,321	28,321	731,710	1,668,359
February	110,250	118,748	440,761	45,003	234,752	949,504	243,496	318,250	112,000	45,003	718,749	1,668,253
March	109,639	112,224	523,806	64,358	218,649	1,604,676	174,776	390,418	27,776	54,649	647,619	2,252,295

		California	Oklahoma	Texas	Kansas	Arkansas	Louisiana	Rocky Mountain	Eastern Fields	Total
March:	Month	19,913,362	13,336,851	13,044,503	2,206,426	3,882,695	1,701,593	3,827,204	3,350,600	61,163,1
	Daily average	642,363	430,221	388,532	71,175	125,247	54,890	123,460	104,853	1,973,0
April	Month	19,299,849	13,452,240	11,577,246	2,268,540	4,068,225	1,496,532	3,738,333	3,373,600	59,173,6
	Daily average	643,328	448,408	385,908	75,618	136,608	49,853	124,611	109,120	1,988,1
May	Month	19,833,676	14,247,697	11,623,395	2,459,765	4,659,117	1,596,701	3,866,010	3,364,000	61,550,3
	Daily average	639,793	459,603	374,948	79,347	150,288	51,507	124,710	105,042	1,985,4
June	Month	18,807,999	14,447,390	11,602,350	2,469,380	4,756,443	1,812,580	3,638,634	3,253,600	60,788,3
	Daily average	626,932	481,580	386,745	82,313	158,548	60,429	121,288	108,453	2,026,2
July	Month	19,274,755	15,191,860	11,917,137	2,671,053	4,597,969	1,815,966	3,768,398	3,371,600	62,607,7
	Daily average	621,766	490,060	384,424	86,195	148,322	58,580	121,561	108,761	2,019,6
August	Month	19,112,998	16,525,356	11,808,876	2,717,398	4,359,241	1,702,525	3,749,375	3,286,000	63,261,7
	Daily average	616,548	533,076	380,931	87,658	140,621	54,920	120,948	106,000	2,040,7
September	Month	18,308,233	16,299,030	11,089,492	2,638,900	4,029,535	1,795,575	3,330,007	3,150,000	60,640,7
	Daily average	610,274	543,301	369,650	87,963	134,318	59,853	111,000	101,936	2,021,3
October	Month	18,696,559	16,189,898	10,942,005	2,768,455	3,983,696	1,774,707	3,058,268	3,395,000	60,808,5
	Daily average	603,115	522,255	353,000	89,305	128,506	57,249	98,654	109,516	1,961,5
November	Month	17,767,034	15,955,620	10,731,264	2,597,460	3,461,050	1,965,921	2,788,110	2,941,000	60,207,4
	Daily average	592,234	531,854	357,709	86,582	115,035	65,531	92,937	98,033	1,940,2
December	Month	18,795,136	16,031,185	11,264,915	2,527,443	3,380,511	1,870,876	2,302,888	3,000,350	59,183,7
	Daily average	606,294	517,135	363,384	81,853	109,049	60,351	74,287	96,402	1,909,1
January:	Month	18,743,288	15,462,800	12,790,195	2,520,853	3,276,484	1,774,072	2,627,876	3,045,993	61,263,2
	Daily average	604,622	498,800	444,845	81,318	105,758	57,228	84,760	98,903	1,976,2
February:	Month	16,859,533	13,905,780	11,361,836	2,466,660	2,886,396	1,547,416	2,666,335	2,905,000	54,606,3
	Daily average	602,494	496,635	405,782	88,095	103,082	55,265	95,226	103,750	1,950,2
	Total 12 months	225,422,513	181,046,707	139,753,274	30,222,338	47,343,262	20,853,514	39,361,227	38,157,243	722,160,0
	Daily average	617,596	496,016	382,886	82,804	129,708	57,133	107,820	104,540	

The ADVERTISERS' INDEX

A

Acme Fishing Tool Co. 85
Acme Petroleum Co. .....
Adler, Joseph L. 162
Ajax Iron Works 50-51
Ajax Rope Co., Inc .....
Alexander, Clive M. 166
Aluminum Co. of America 53
Amdyco Corporation .....
American Appraisal Co. .....
American Cable Co. .....
American Car & Foundry Co. 133
American Cast Iron Pipe Co. 78
American Radiator Co. .....
American Schaeffer Budenburg Corp.
American Sheet & Tin Plate Co. 141
American Steel Band Works 124
American Tank Co. 8
American Telephone and Telegraph Co. .....
Ames Shovel & Tool Co. .....
Anderson, Carl B. 162
Anderson & Anderson 162
Andrews Steel Co. 135
Arbon, Paul & Co. 107
Armstrong Bros., Tool Co. 165
Athey Truss Wheel Co. .....
Atlas Ball Co. .....
Austin Co. .....
Axelson Machine Co. 95

B

Baash-Ross Tool Co. 136
Baker Casing Shoe Co. 164
Barber-Greene Co. .....
Barnes Manufacturing Co. .....
Barnickel, Wm. S. & Co. 163
Barnsdall Refining Co. .....
Bartlesville Supply Co. 149
Berwald Chemical Co. 165
Bessemer Gas Engine Co. 29
Biggs Boiler Works Co. 5
Bignall & Keeler Machine Works ...149
Black, Sivalls & Bryson, Inc. 39
Blaw-Knox Co. .....
Borden Co. 116
Botfield Refractories Co. .....
Bovaird & Seyfang Mfg. Co. .....
Bovaird Supply Co., The .....
Braden Co., The .....
Bradford Motor Works .....
Bradford Rig & Reel Co. .....
Braun, C. F. & Co. .....
Bridgeport Machine Co. .....Back Cover
Bristol Co. 94
Broderick & Bascom Rope Co. 143
Brokaw, Dixon, Garner & McKee ...162
Brown Instrument Co. .....
Brown & Thomsen 162
Bruce-Macbeth Engine Co. 113
Buckeye Traction Ditcher Co. 131
Buff & Buff Manufacturing Co. 166
Burns Tool Co. .....
Burt Manufacturing Co. 118
Busch-Sulzer Bros. Diesel Engine Co. 147
Butler Manufacturing Co. .....

C

Capital Abstract & Realty Co. 164
Carbondale Machine Co. .....
Carnegie Steel Co. 116
Caudill, Samuel J. 162
Celite Products Co. .....
Central Steel Co. .....
Chain Belt Co. 55
Champion Machine & Forging Co. ....
Chaplin-Fulton Manufacturing Co. ..142
Chapman Valve Manufacturing Co. .
Chestnut & Smith Corp. 129
Chicago Bridge & Iron Works .....
Chicago Pneumatic Tool Co. .....
Clapp, Frederick G. 162
Clark Bros. Co. 64-65
Clark, Robert W. 162
Classified Wants 144-145-146
Climax Engineering Co. .....
Columbian Rope Co. 132
Columbian Steel Tank Co. .....
Columbus Sucker Rod Co. .....
Continental Motors Corp. .....
Continental Supply Co. 75
Cooper, C. & G. Co. 60-61
Cox & Sons, Co., The 114
Crane Co. .....
Cunningham Co. 138
Cyclone Fence Co. 126

D

D. & R. Pump & Supply Co. 98
Darling Valve & Manufacturing Co. 109
Dart, E. M. Manufacturing Co. .....
Davis Regulator Co. 92
Dawson Towel Supply Co. 164
Dayton Pipe Coupling Co. .....
Dearborn Chemical Co. 137
De La Vergne Machine Co. .....
Delta Electric Co. .....

D

Detroit Graphite Co. .....
Diamond Drill Carbon Co. 165
Dickey-Ashby Fountain Co. 164
Diamond Drilling & Exploration Co.
Dixon, Joseph, Crucible Co. .....
Donovan Boiler Works, Inc. .....
Dresser, S. R. Manufacturing Co. ... 27
Dunn Manufacturing Co. 13

E

Eagle Picher Lead Co. 2
Eastern Torpedo Co. 138
Edward Valve & Manufacturing Co. 138
Empire Refineries Inc. 7
Equitable Meter Co. 165
Essex Brass Corp. 112

F

Fairbanks-Morse & Co. 57-58
Federal Supply Co. .....
Fenwick-Reddaway Mfg. Co. 67
Fisher Governor Co. 125
Fleming Martin Undertaking Co. 165
Flexible Steel Lacing Co. 124
Foamite-Childs Corp. .....
Foggan, Geo. N. .....
Fohs, F. Julius 166
Foos Gas Engine Co. .....
Fort Worth Laboratories 165
Foster & Reiter 166
Foxboro Co., Inc., The .....
Franklin Valveless Engine Co. 137
Frick-Reid Supply Co. 73
Fulton Iron Works .....

G

Gantz Tank Co. .....
Gardner Governor Co. 9
Garlock Packing Co. 102
Garrett, M. M. 162
Gaso Pump & Burner Manufacturing Co. .....Inside Back Cover
General American Tank Car Corp. ..
General Motors Truck Co. .....
Gomory, W. L. 166
Goodrich, B. F. Rubber Co., Inc. .....Inside Front Cover
Goodyear Tire & Rubber Co. .....
Gould Burner Co. .....
Goulds Manufacturing Co. .....
Gott, H. P. Manufacturing Co. 142
Graver Corp. 74
Greene, Frank C. 166
Griscom-Russell Co. 147
Guiberson Corp. 33
Gurley, W. & L. E. .....

H

Halliburton, Erle P. 4
Harrisburg Pipe & Pipe Bending Co. 116
Havana Manufacturing Co. 164
Hazard Manufacturing Co. .....
Henry, George W. 164
Heppenstall, Forge & Knife Co. ...119
Herald Brothers 162
Hercules Motor Corp. .....
Heydrick Mapping Co. 165
Hills-McCanna Co. .....
Hinderliter Tool Co. 47
Hoffman Manufacturing Co. .....
Homestead Valve Co. .....
Hood, H. H. 162
Hope Engineering & Supply Co. 68
Hough, Charles N. Mfg. Co. 139
Houston Pump & Supply Co. 45
Hughes Tool Co. 63
Hunt, Robert W. Co. 162
Huntley & Huntley 162

I

Illinois Glass Co. 88
Imperial Belting Co. 108
Imperial Brass Mfg. Co. .....
Ingersoll-Rand Co. .....
International Derrick & Equipment Co. 76-77
International Harvester Co. of America .....
Iron King Manufacturing Co. .....

J

Jarecki Manufacturing Co. .....
Johns-Manville, Inc. .....
Jones Oil Well Reamer Co 99
Jones, S. M. Co. 165

K

Kansas City Bolt & Nut Co. 49
Kansas City Hay Press Co. 164
Kaw Boiler Works Co. .....
Kellogg, M. W. Co. 139

K

Kelly & Jones Co. 166
Kelly-Springfield Tire Co. .....
Kennedy Valve Manufacturing Co. ..
Kerr, John B. 166
Keuffel & Esser .....
Kewanee Boiler Co. .....
Kinney Manufacturing Co. .....
Kirk, Charles T. 162

L

Lafe Speer Abstract Co. 164
Landis Machine Co. 3
Larkin & Co. 96
Layne & Bowler Co. .....
Leidecker Tool Co. 83
Leschen, A. & Sons Rope Co. 79
Lewis, James O. 162
Linde Air Products Co. 1
Link-Belt Co. 89
Longhart Supply Co. .....
Longyear, E. J. Co. 104-166
Lucey Manufacturing Corp. 111
Ludlow Valve Manufacturing Co. ...
Lufkin Foundry & Machine Co. ...
Lufkin Rule Co. .....
Lunkenheimer Co. 43

M

Magnolia Petroleum Co. .....
Maloney Tank Manufacturing Co. .140
Manzel Brothers Co. .....
Marion Machine Foundry & Supply Co. 80-81
Marsh Gauge Pole Co. 164
Matson, George C. 162
Matteson, W. G. 166
Messimer, H. H. 162
Metric Metal Works 35
Miller Improved Gas Engine Co. ... 97
Miller, Max B. & Co., Inc. .....
Monarch Cement Co. .....
Moore, Lee C. & Co., Inc. 90-91
Munn & Co. 165
Myers F. E., Bro. & Co. 166

Mc

McCord Radiator Manufacturing Co. .
McGregor Working Barrel Co. .....
McIntosh & Seymour Corp. 121
McNutt, V. H. 166

N

National Carbon Co., Inc. 1
National Lead Co. .....
National Supply Co. 31
National Transit Pump & Machine Co. 106
National Turnbuckle Derrick Co. ..110
National Tube Co. .....
Newton Process Co. 25
Norris Brothers 161
North American Car Co. 118
Northern Oil Information Bureau ...164
Northrup Equipment Co. .....
Novo Engine Co. .....
Nugent Steel Casting Co 163
Nuttall, R. D. & Co. 10
Nye Tool & Machine Works 128

O

O'Brien Steel Construction Co. 108
Ohio Steel Foundry Co .....
Oil Conservation Engineering Co. ..
Oil Well Improvements Co. Front Cover
Oil Well Supply Co. 36-37
Okmulgee Boiler & Welding Works.
Oster Manufacturing Co. .....
Oxweld Acetylene Co. 1

P

Page Fence & Wire Products Association .....
Parkersburg Machine Co. .....
Parkersburg Rig & Reel Co. .....
Patrick, R. S. .....
Pattin Brothers Co. .....
Pennzoil Co., The .....
Petroleum Iron Works 100
Pforzheimer, Carl H. & Co. .....
Pioneer Tank & Boiler Co. .....
Pittsburgh-Des Moines Steel Co. ....
Pittsburgh Meter Co. 41-128
Pittsburgh Reinforced Brazing & Machine Co. .....
Plibrico Jointless Firebrick Co. .....
Powell, William Co. .....
Power Manufacturing Co. .....
Power Piping Co. 164
Power Specialty Co. .....
Prescott Co., The .....
Prest-O-Lite Co., Inc. 1
Pure Oil Co. 122
Pyle-National Co. .....

R

Reading, Iron Co. 127
Reading Steel Casting Co., Inc. ...163
Reed Roller Bit Co. 86-87
Regan Forge & Engineering Co. ..
Reid, Joseph, Gas Engine Co. 143
Republic Iron & Steel Co. 130
Republic Supply Co. .....
Rich, John L. 162
Ring, DeWitt T. 162
Riter-Conley Co. 166
Robinson, Heath M. 162
Rock Island Plow Co. .....
Roots, P. H. & F. M. Co. .....
Ross-Meehan Foundries .....
Ryerson, Joseph T. & Son 164

S

Schley, Jack A. 165
Sherwin-Williams Co. 70-71
Shippers' Car Line Co. .....
Sinclair Refining Co. 157
Sivyer Steel Casting Co. .....
Slater Bros. Turnbuckle Derrick Co.
Smith Separator Co. 135
South Chester Tube Co. .....
Southern Cornice Works .....
Spang & Co. 115
Spellman, John M. 166
Spence Machine Co. 163
Spengler Core-Drilling Co. 120
St. Louis Steel Casting Co. .....
Stalder, Walter 166
Standard Engineering Co. .....
Standard Torpedo Co. .....
Stanley Belting Corp. 69
Star Drilling Machine Co. 72
Sterling Steel Co. .....
Stewart, Irvine E. 162
Sullivan Machinery Co. .....
Superior Tube Co. 105
Swartwout Co., The .....

T

Tagliabue, C. J. Mfg. Co. .....
Taylor Instrument Co. .....
Taylor-Wharton Iron & Steel Co. .....
Templeton, Kenly & Co., Ltd. 161
Texas Co., The .....
Texas-Gulf Sulphur Co. 120
Titusville Forge Co. .....
Titusville Iron Works .....
Toledo Pipe Threading Machine Co. .112
Trimont Manufacturing Co. .....
Trumble Gas Trap Co. .....
Truscon Steel Co. .....
Tulsa Boiler & Machinery Co. 114
Tulsa Ice Co. 164

U

United Iron Works .....
United States Cast Iron Pipe & Foundry Co. .....
U. S. Tool Co. .....
Universal Oil Products Co. 14

V

Vogt Brothers Manufacturing Co. 163
Vogt, Henry Machine Co. .....

W

Wall Rope Works, Inc. .....
Walworth Manufacturing Co. .....
Washburne, C. W. 166
Waukesha Motor Co. .....
Wertzberger Derrick Co. 103
Westcott & Greis .....
Westcott Valve Co. .....
Western Bank Supply Co. 164
Western Machinery Co. .....
Westinghouse Electric & Manufacturing Co. 12
White Co. 93
Wickwire Spencer Steel Co., Inc. .. 11
Wico Electric Co. .....
Williams, J. H. & Co. 16
Wilson Oil Tools Corp. .....
Wilson Welder & Metals Co. .....
Wirth, Alfred & Co. .....
Wood & Wood 162
Worthington Pump & Machinery Corp. 15
Wright, Harry F. 166
Wright Manufacturing Co. 166

Y

Yale & Towne Manufacturing Co. ...

Z

Zero Hour Torpedo Co. .....